Mitigation Process Improvement Workshops

Redesign, Modification, and Implementation

US Army Corps of Engineers
Wilmington District

NCDOT-NCDENR-USACE

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December 5-7, 2001

Workshop facilitated by: MDOT

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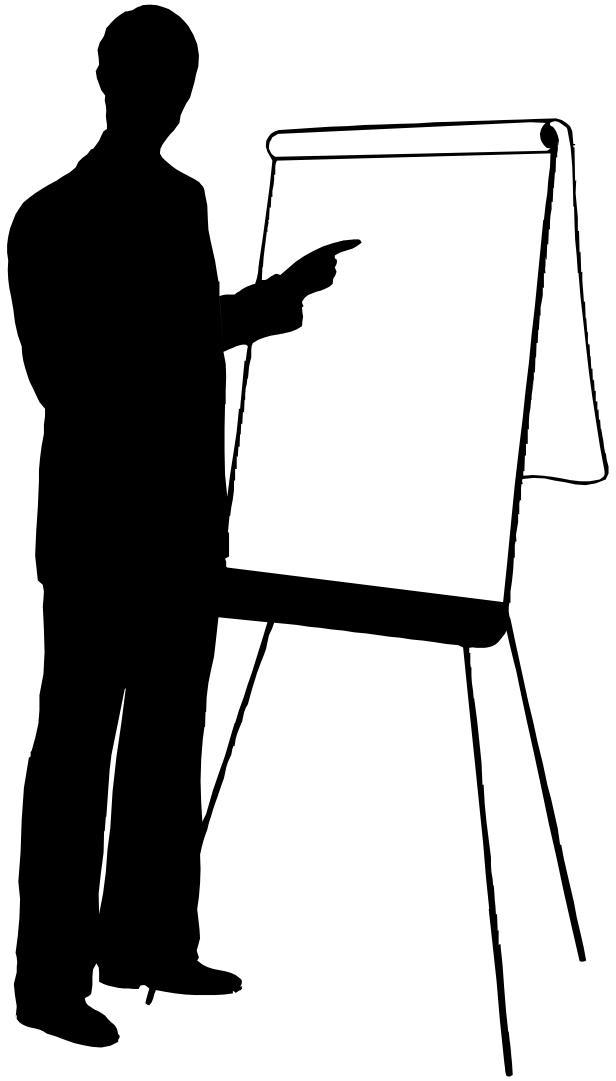

Process Mission

To develop a structured mitigation process that supports the timely delivery of North Carolina's Transportation Program while appropriately compensating for unavoidable and minimized wetland, stream, and buffer impacts.

Workshop Participants

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Customers

Internal:
USACE
DENR
DOT

External:
Public
Local Government
USFWS
NCWRC
NMFS
EPA

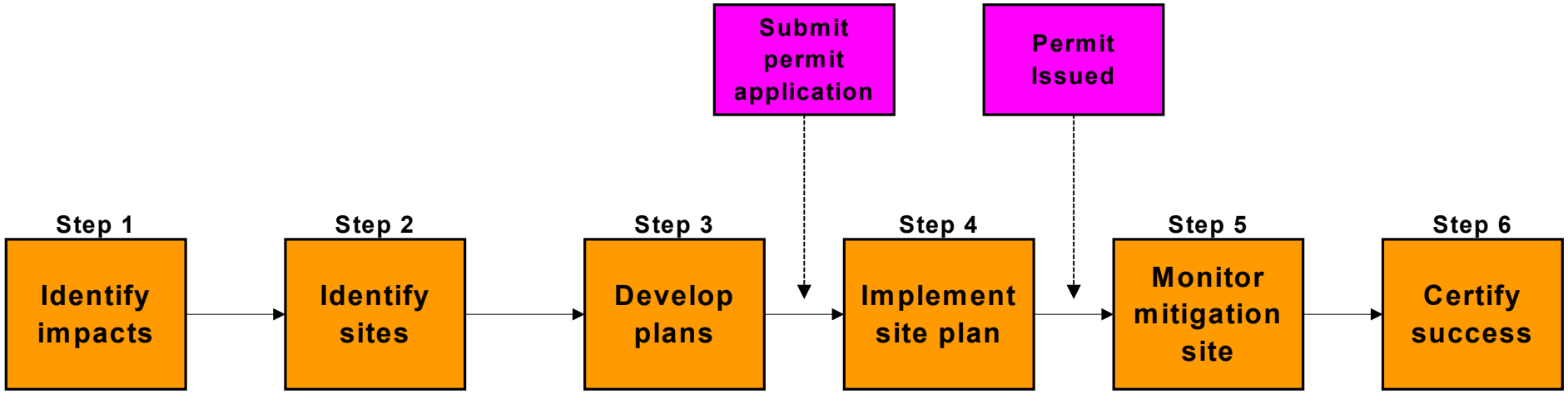
Sponsor Expectations

- **Identify customer requirements**
- **Define existing process**
- **Identify inhibitors of current process**
- **Improve current process**
- **Develop list of issues about avoidance and minimization**
- **Documentation of process improvement journey**
- **Develop implementation plan**

Analyze Current Process

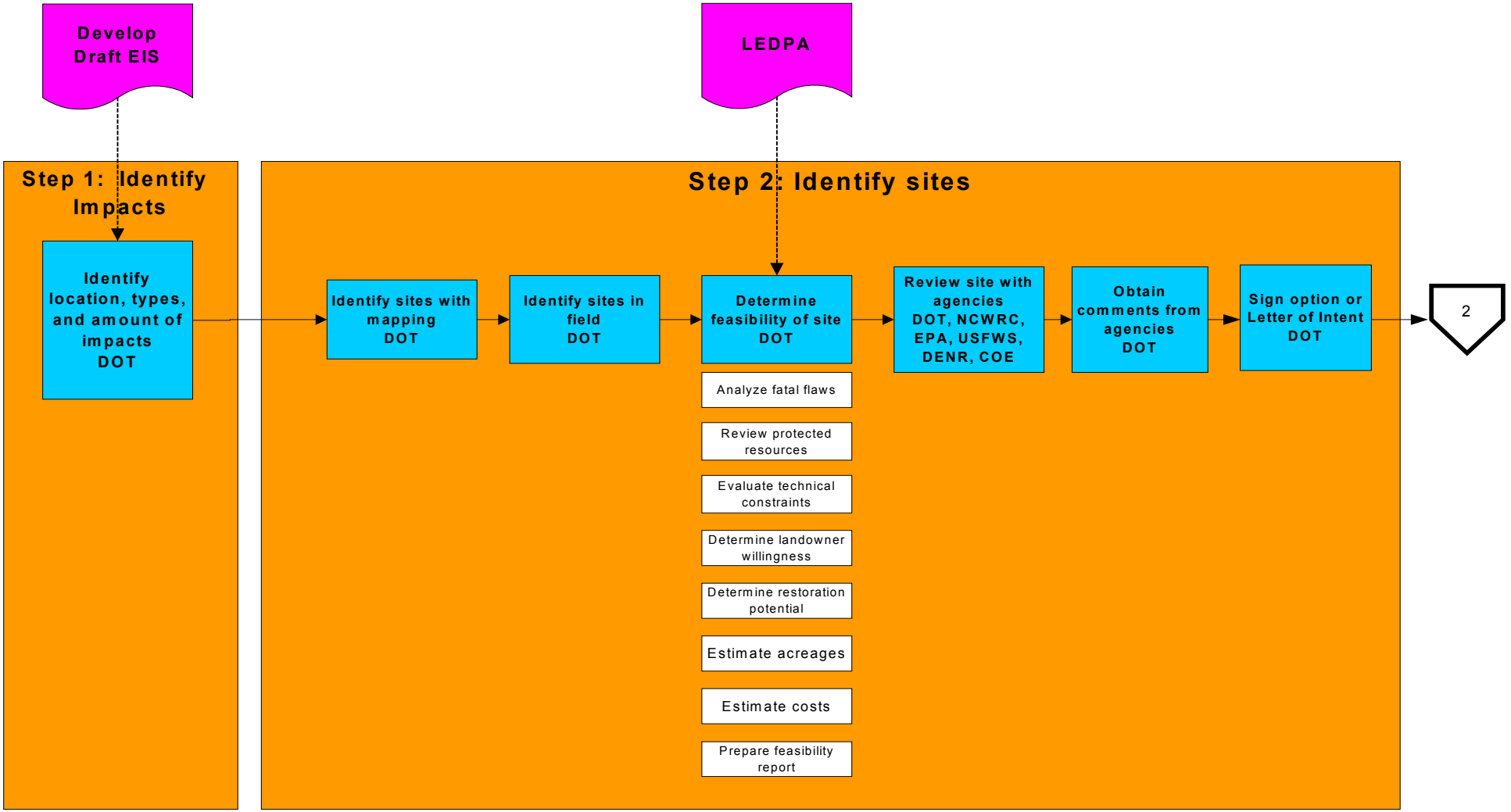
- High Level As-Is Process Map
- Detailed Level As-Is Process Map
- Flow Item
- Cost-Time Profile (As-Is Process)
- Customer Value Structures

High Level As-Is Process Map



CURRENT PROCESS

Detailed Level As-Is Process Map



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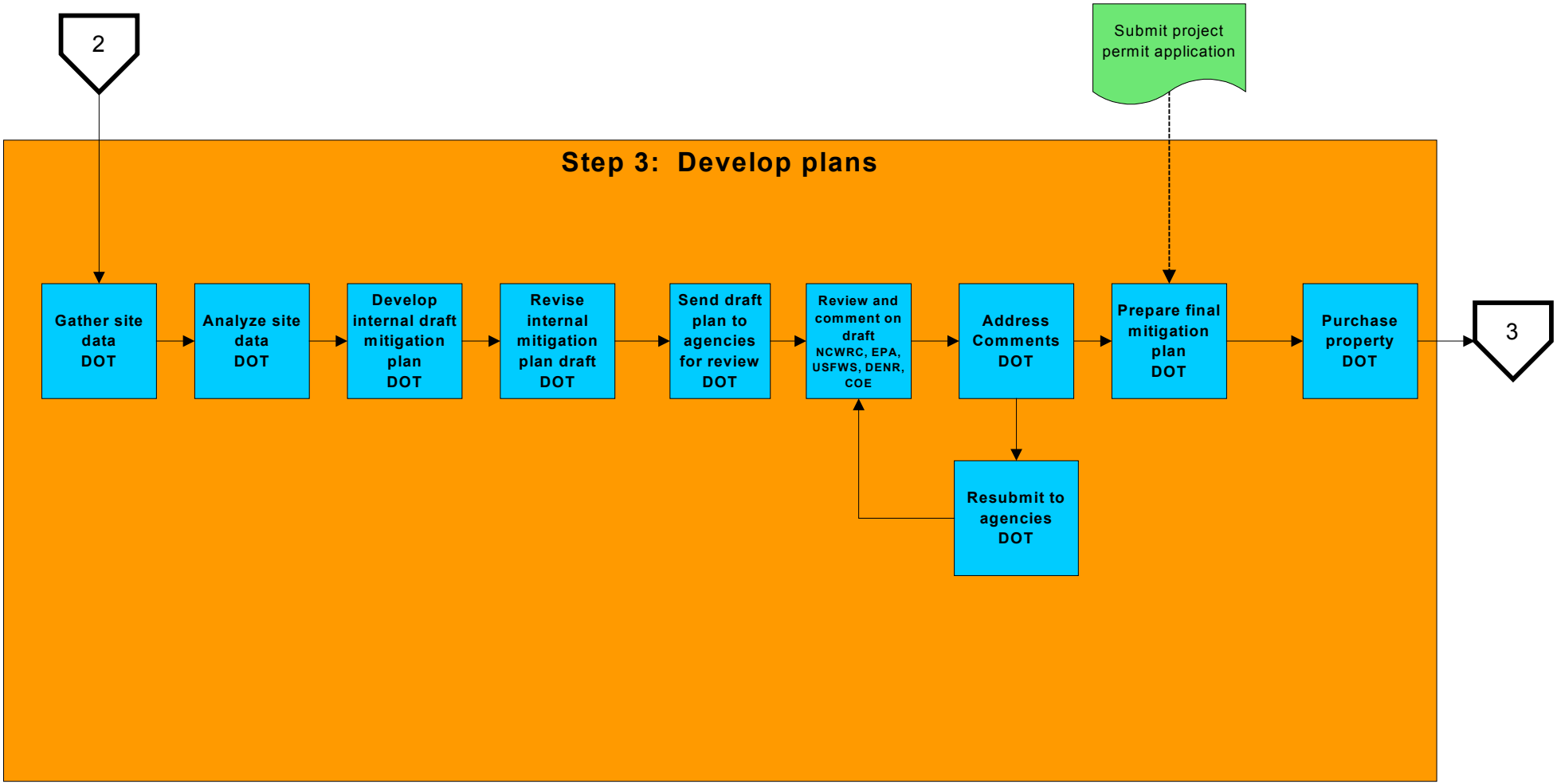

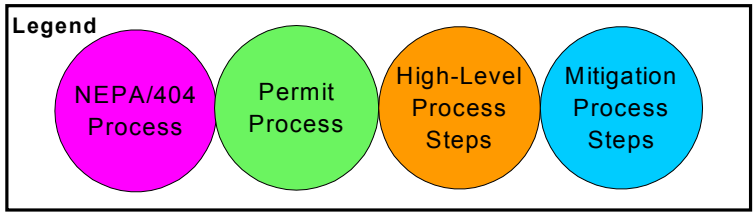

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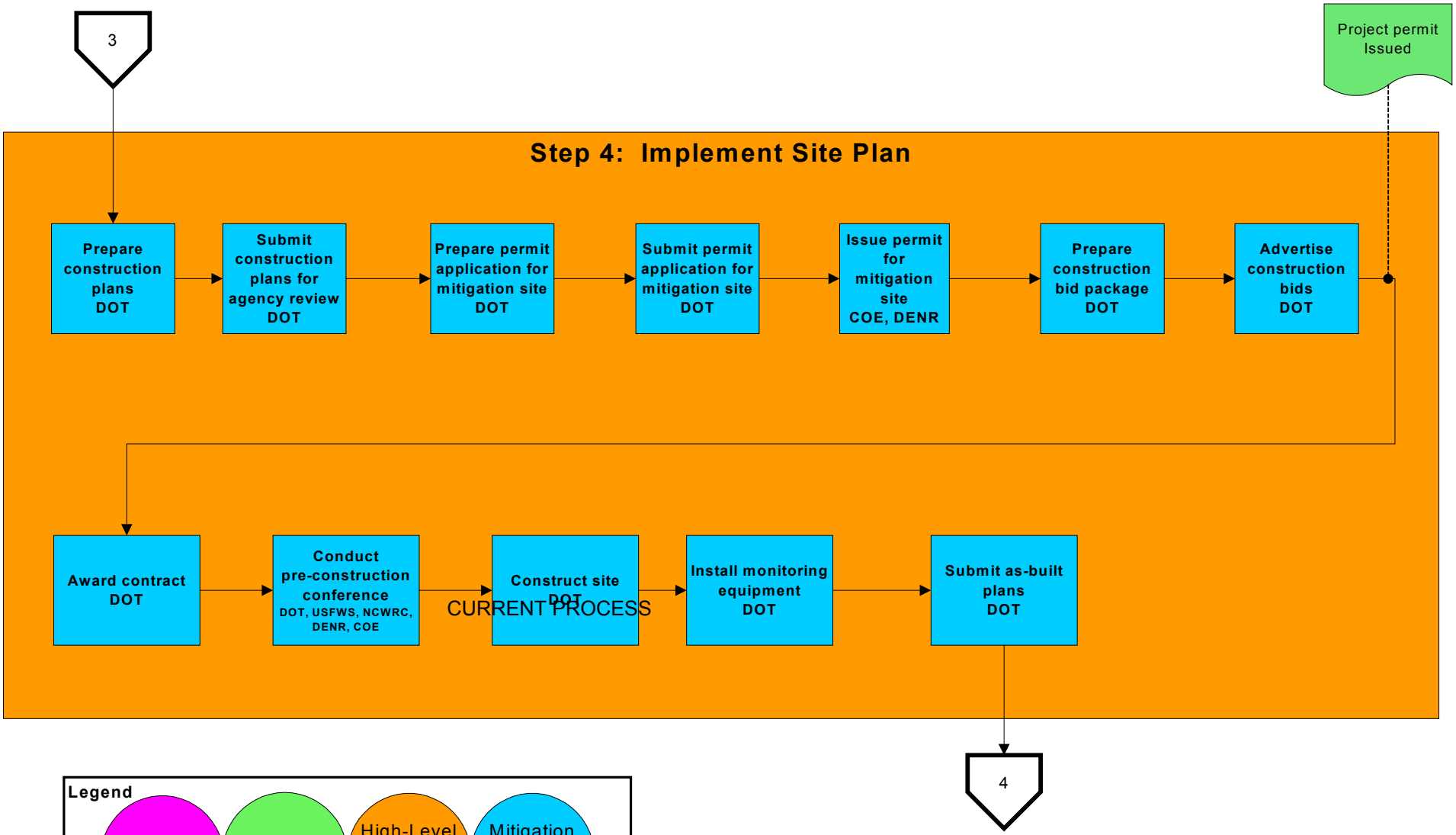

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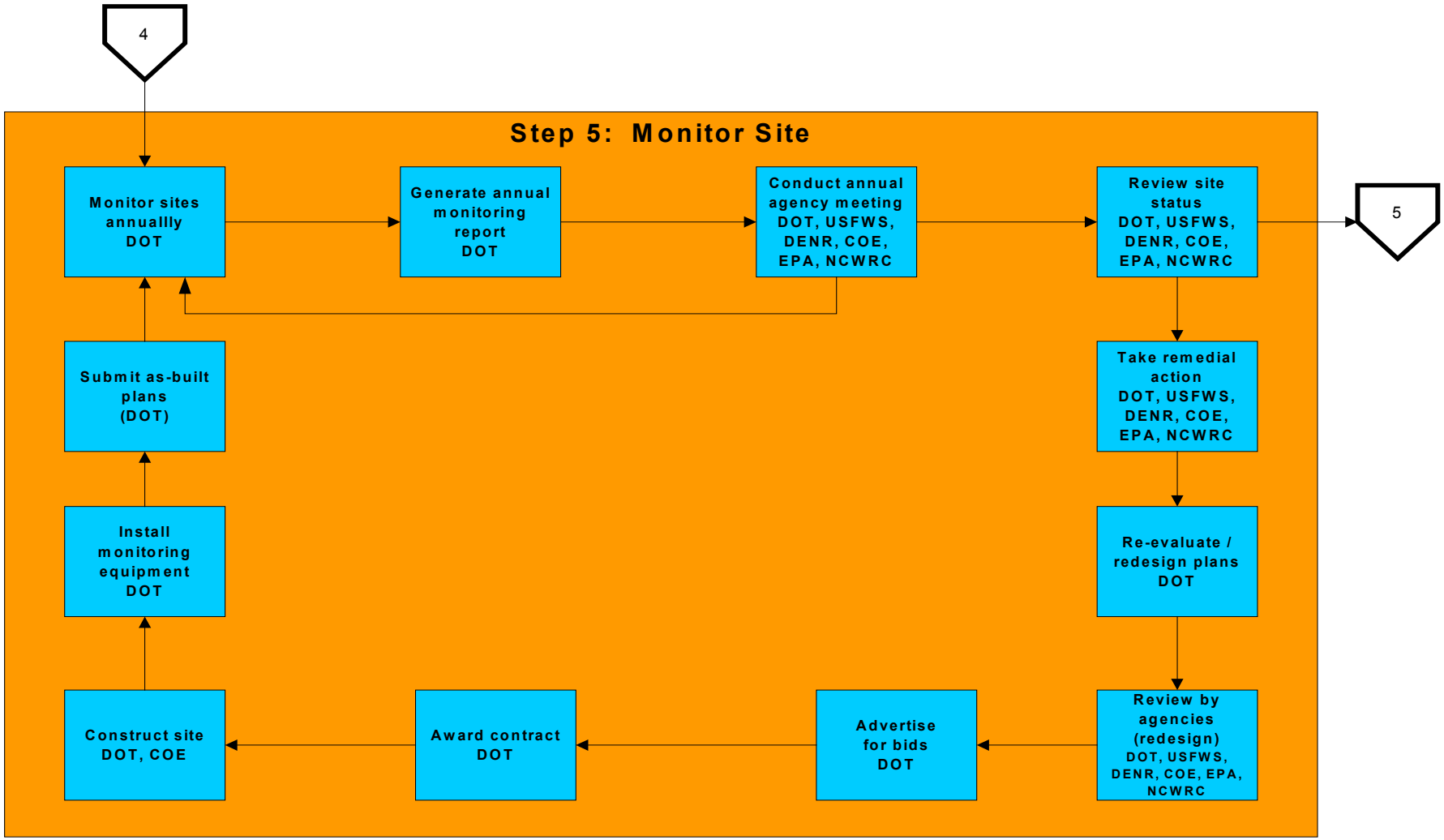

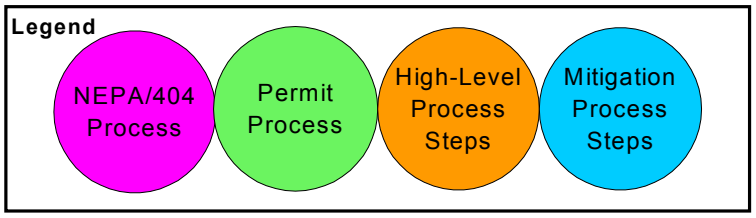

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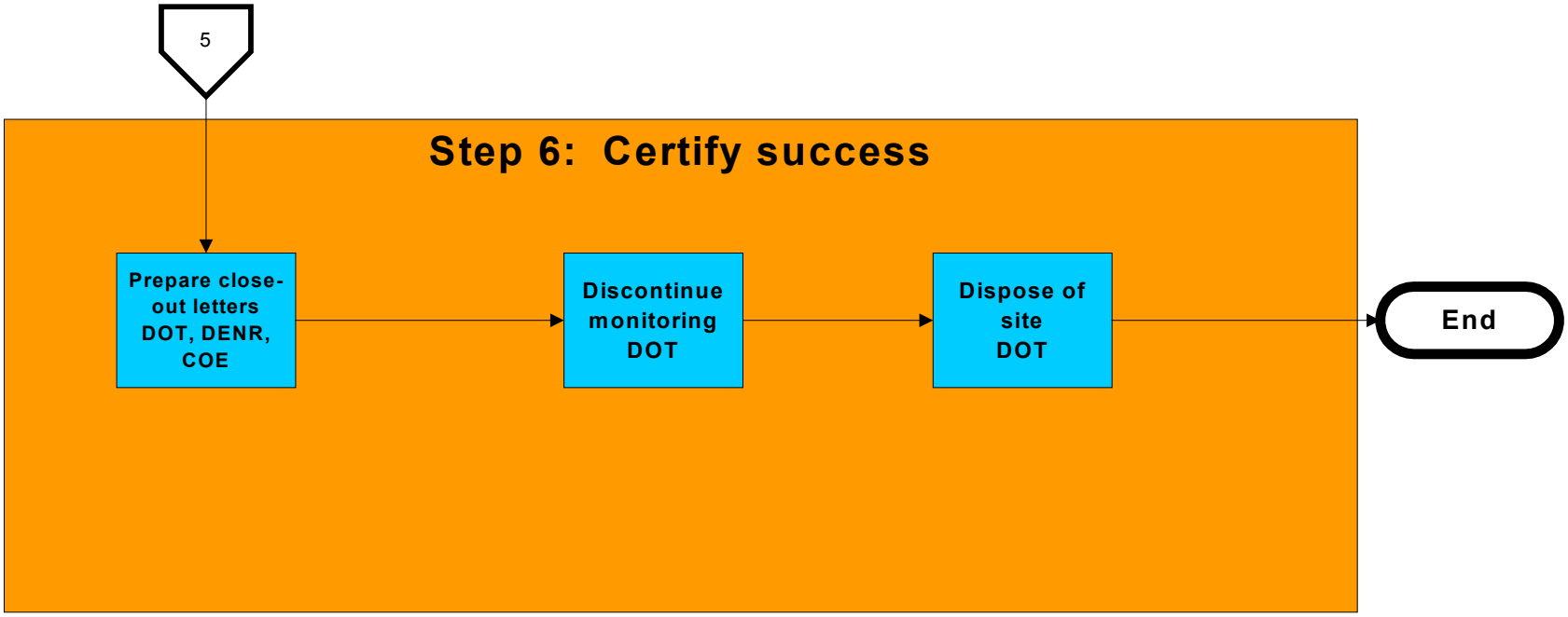
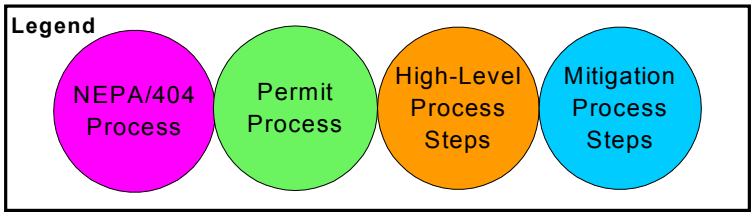


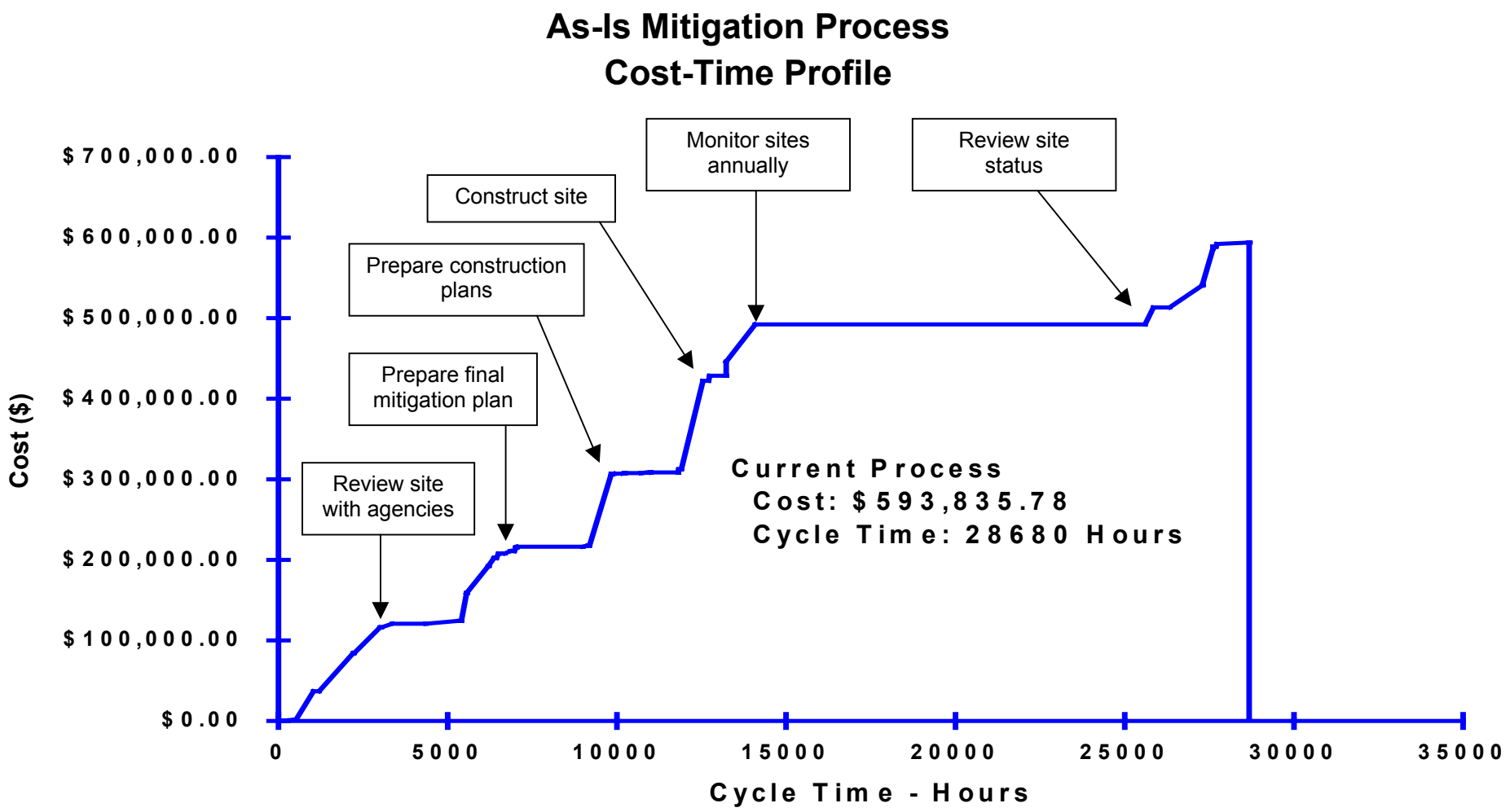


CURRENT PROCESS

Flow Item

- **Complex**
- **Potential for high adverse environmental impacts (requires wetland, buffer, and stream mitigation)**
- **Requires going through NEPA/404 Merger Process**
- **“In-house” DOT project**
- **Project is located in CAMA county**
- **Project encounters changes in the “11th hour”**
- **Remedial action loop will occur once**
- **Re-submitted mitigation plan loop – one loop (i.e., one re-submittal)**
- **100-acre wetland mitigation / 3000 ft stream / 12 acre buffer**

Cost-Time Profile (As-Is Process)



CURRENT PROCESS

Customer Value Structures

Customer: NC Division of Coastal Management

Needs	Value %	Performance	Score	Gap
Mitigation plans contain sufficient data to evaluate the site and compare it to the impacts	35	0.4	14	21
Submitted mitigation plans are consistent with local land use plans	15	0.5	7.5	7.5
Agencies coordinate the review of mitigation plans	10	0.7	7.0	3.0
The review process is standardized, defined and streamlined with adequate allocation of staff and resources	10	0.25	2.5	7.5
Data is provided showing that sites are similar to natural wetlands, that sites provide wetland functions within a watershed and are meeting a goal of “no net loss” of wetland functions and area (up front mitigation)	30	0	0	30
Totals	100%	1.9	31.0	69.0

Customer Value Structures

Customer: NC Division of Marine Fisheries

Needs	Value %	Performance	Score	Gap
Provide specific, measurable results	20	0.5	10	10
Full functional replacement of loss	30	0.1	3	27
Mitigation in place as initial project phase	30	0	0	30
Enforceable commitment that mitigation, if unsuccessful, will be done over	20	0	0	20
Totals	100%	0.6	13.0	87.0

Customer Value Structures

Customer: NC Department of Transportation

Needs	Value %	Performance	Score	Gap
Proper site selection	15	0.7	10.5	4.5
Staff needs to implement program (mitigation)	30	0.3	9.0	21
Consistent guidance by agencies	30	0.4	12.0	18
Flexible mitigation	10	0.1	1.0	9
Partnership with agencies	15	0.2	3.0	12
Totals	100%	1.7	35.5	64.5

Customer Value Structures

Customer: NC Division of Water Quality

Needs	Value %	Performance	Score	Gap
Provide 1:1 restoration /creation	50	1.0	50	0
Select mitigation sites with high likelihood of success	20	0.5	10	10
Select mitigation sites with highest watershed benefits	5	0.2	1	4
Mitigation begin before impact	5	0.2	1	4
Prepare acceptable stream mitigation plans	20	0.2	4	16
Totals	100%	2.1	10	90

Customer Value Structures

Customer: NC Wildlife Resources Commission

Needs	Value %	Performance	Score	Gap
Replacement of lost functions	40	0.3	12.0	28
Timing of mitigation vs. impacts	20	0.1	2.0	18
Proper/good site selection	15	0.3	4.5	10.5
Success of mitigation measurable and attainable	15	0.2	3.0	12
Dispensation to public entity	10	0.1	1.0	9
Totals	100%	1.0	22.5	77.5

Customer Value Structures

Customer: US Army Corps of Engineers

Needs	Value %	Performance	Score	Gap
Need for mitigation that provides for functional replacement	50% (should be higher)	0.25	12.5	47.5
Consistent and predictable process for the development of plans	30%	0.2	6	24
Delivery of final approved plans before permit is needed	10%	0.2	2	8
Mitigation site construction and monitoring	10%	0.5	5	5
Totals	100%	0.50	25.5	74.5

Customer Value Structures

Customer: US Environmental Protection Agency

Needs	Value %	Performance	Score	Gap
Standard operating procedures or guidelines for mitigation in NC	30	0.4	12	18
Functional replacement (method for measuring and ensuring)	45	0.2	9	36
Early planning and mitigation planning	25	0.3	28.5	17.5
Totals	100%	0.9	28.5	71.5

Customer Value Structures

Customer: US Fish and Wildlife Service

Needs	Value %	Performance	Score	Gap
Receiving mitigation before impacts occur	40	0.1	4	36
Identify/acquire mitigation that mirrors the loss (commiserate with impacts)	20	0.1	2	18
Ecologically rather than site based	20	0.1	2	18
Monitoring (more complex, longer term)	20	0.1	2	18
Totals	100%	0.4	10	90

Customer Value Structures

Customer: NC Wetland Restoration Program

Needs	Value %	Performance	Score	Gap
Identification of impacts	10	0.4	4	6
Identify, evaluate and select sites	40	0.3	12	28
Develop site specific mitigation plan	20	0.4	8	12
Construct site specific mitigation plan	25	0.6	15	10
Monitor mitigation site	5	0.4	2	3
Totals	100%	2.1	41	59

Issues

Step 1. Identify impacts

- DOT underestimates impacts
- Lack of good qualitative assessment of project impacts (2)
- Mitigation by county is problematic
- Preservation role is too limited (4)
- “Resparian” and “Riverine” are not consistently defined (1)

Step 2. Identify sites

- Lack of GIS layers that will reduce field verification
- No goal specified for each site (1)
- Cannot count uplands as credit (1)
- Lack of resources to field confirm and find sites
- Lack of field communication with DOT divisions, regions, etc., including resource agencies
- Lose sites because of unwilling property owners (1)
- How to move ahead with a site that may have protected species
- Site potential is often overestimated (4)
- Different agencies want different mitigation attributes; DOT does not genuinely know what agencies desire; need consistent guidance for mitigation (6)
- Inability to get all players to field because of individual schedules
- Reluctance of DOT to sign letter of purchase

Step 3. Develop Mitigation Plan

- Lack baseline data (5)
- Lack standard methodology
- Lack reference site protocols (1)

Issues (cont'd)

- Lack of standard success criteria for stream mitigation (e.g., what monitoring, how many years, etc.); DOT doesn't put realistic permit requirements for success criteria in the plan (7)
- Agency comments are not being adequately addressed in the mitigation plan
- Lack of commitment from agencies; agencies resist perception of ownership of site plans (6)
- No formal approved plan (2)
- Approved mitigation plan is too late in the process (7)

Step 4. Implement Site Plan

- Length of time to advertise project
- Contractors not familiar with mitigation (lowest bidder)
- Failure to schedule meetings with enough notice
- Lack of pre-qualified contractors
- Staff lacks expertise in construction techniques
- Lack of biologists on site during construction
- Seasonality for construction; summer grading; wetland vegetation in fall and winter; stream vegetation in winter prior to spring
- Site constructed after project permit is issued
- Communication lacking where installation of monitoring equipment is concerned

Step 5. Monitor Site

- Not enough prior notice for Corps to attend site vegetation counts
- Timing of report generation / data collection
- Human impacts on sites
- Ability to identify sample plots; identification of vegetation
- Inconsistent permit requirements for vegetation monitoring; some require Corps involvement, some don't
- Technical difficulties with monitoring equipment
- Difficulty in interpretation of monitoring results

Issues (cont'd)

Step 6. Certify Success

- Not knowing when to initiate remedial action (2)
- Lack of consistent understanding of success criteria
- "Final" analysis of success of site relative to project goals (6)
- Lack of standardized process for property disposal (long term)
- DOT doesn't start site disposition before total site success

General Issues

- Lack of adequate staff (20)
- DOT mitigation is project focused as opposed to program focused (9)
- Who does DOT serve? Need single agency to make call
- Should aggressive avoidance be considered adequate mitigation (1)
- Lack of understanding of needs of watershed (24)
- Failure to coordinate field visits for >1 project
- Failure to provide adequate meeting notice before meetings
- Lack of training/education for agency staff and contractors on construction methods (1)
- Lack of public involvement in the mitigation process
- Site purchase urgency drives cost
- Lack of perpetual protection to DOT sites and private mitigation sites; mitigation site may be proposed for impact in the future
- Lack of involvement of the academic community in the overall mitigation (2)
- Need to account for site variations
- Mitigation not done early enough (25)
- Regulations do not foster functional replacement; lack of accepted functional methodology; lack of functional assessment for mitigation; mitigation is not looked at functionally nor ecologically (stream wetland buffers) (51)

Note: (#) indicates the number of votes received during the dot-voting exercise

Key Issues

- Lack of functional replacement (51 votes)

The problem is wetland/stream systems are complex and not completely understood as evidenced by scientific uncertainty, difficulty in development, lack of mandate / lack of commitment, and no formal adoption of a consistent functional assessment method for North Carolina resulting in lack of functional replacement.

- Mitigation process not done early enough and plans are approved too late (25 votes)

The project is that project dollars are lost if projects are not let as evidenced by outraged board members leading to short-term needs versus long-term goals for mitigation.

- Lack of understanding of needs of the watershed (24 votes)

The problem is lack of science and guidance at the time regulations are written as evidenced by lack of understanding of the needs of the watershed which results in mitigation projects focused on project impacts and failure to account for watershed losses.

- DOT mitigation is project focused as opposed to program focused (9 votes)

The problem is public perception of dysfunctional infrastructures as evidenced by public pressure, political involvement, external dictation of schedules and volumes, and crisis mode, which results in mitigation, is project focused rather than program focused.

- Lack of commitment and ownership to mitigation agencies (6 votes)

The problem is there is regulatory constraint on the part of the agencies in accepting ownership of mitigation plans as evidenced by lack of direction / commitment which results in an unacceptable level of risk on the part of NCDOT.

Key Issues (cont'd)

- Lack of standard success criteria for mitigation (7 votes)

The problem is that there are different legislated responsibilities / mandates for different regulatory resource agencies as evidenced by a lack of standard success criteria and goals for mitigation sites which results in the perception of unsuccessful mitigation.

- Lack of consistency in guidance from agencies to DOT for mitigation (2 votes)

The problem is agencies have different missions and regulatory authority as evidenced by a lack of consistency in guidance from the agencies to NCDOT which results in mitigation sites being structure or performance focused and not meeting the needs of individual agencies.

- Lack of final analysis of success site relative to project goals (1 vote)

The problem is ecological structure is easier to measure than function as evidenced by no regulatory requirement to measure function, which results in functional goals have not been met.

Design Modified Current Process

- Modification Ideas
- High Level Modified Process Map
- Detailed Level Modified Process Map
- Revised Customer Value Structure (modified)
- Assumptions
- Summary of Benefits
- Barriers to Implementation
- Recommendations

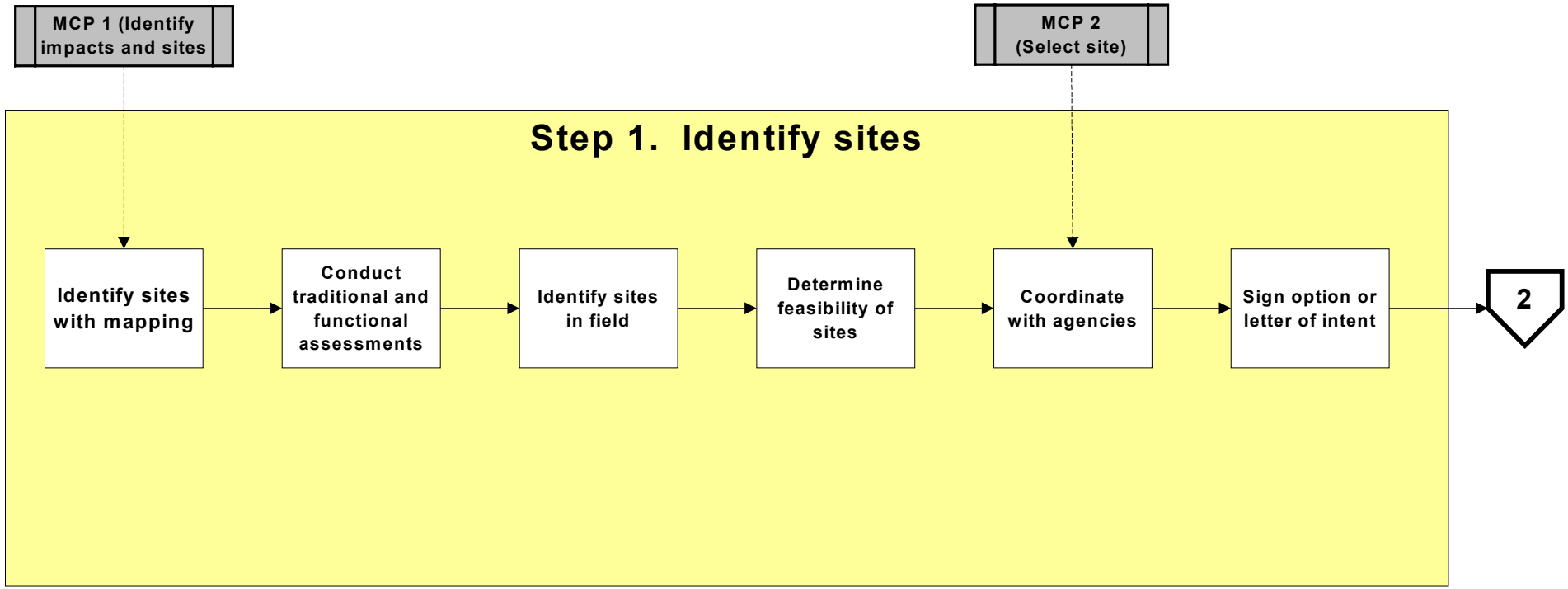
Modification Ideas

(Dot-voting results)

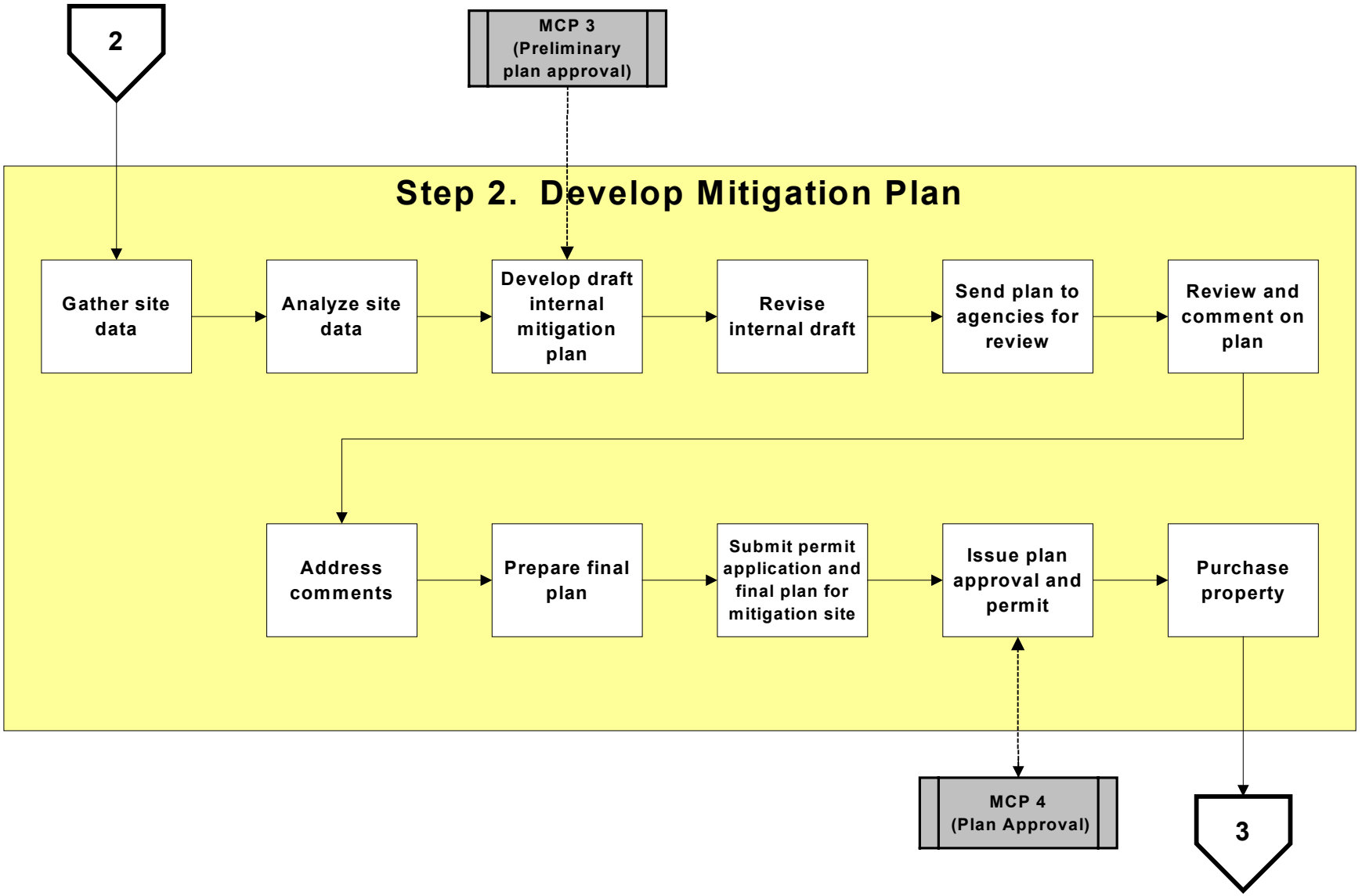
1. Establish replacement of functional loss goal
2. Tie mitigation with 404/401 NEPA Merger 01
3. Clear and consistent guidelines around wetland/streams (monitor/success)
4. Emphasis on assessment (on-site) as much as possible
5. High emphasis on justified preservation of selected sites

High Level To-Be Modified Process Map

Detailed Level To-Be Modified Process Map



Detailed Level To-Be Modified Process Map



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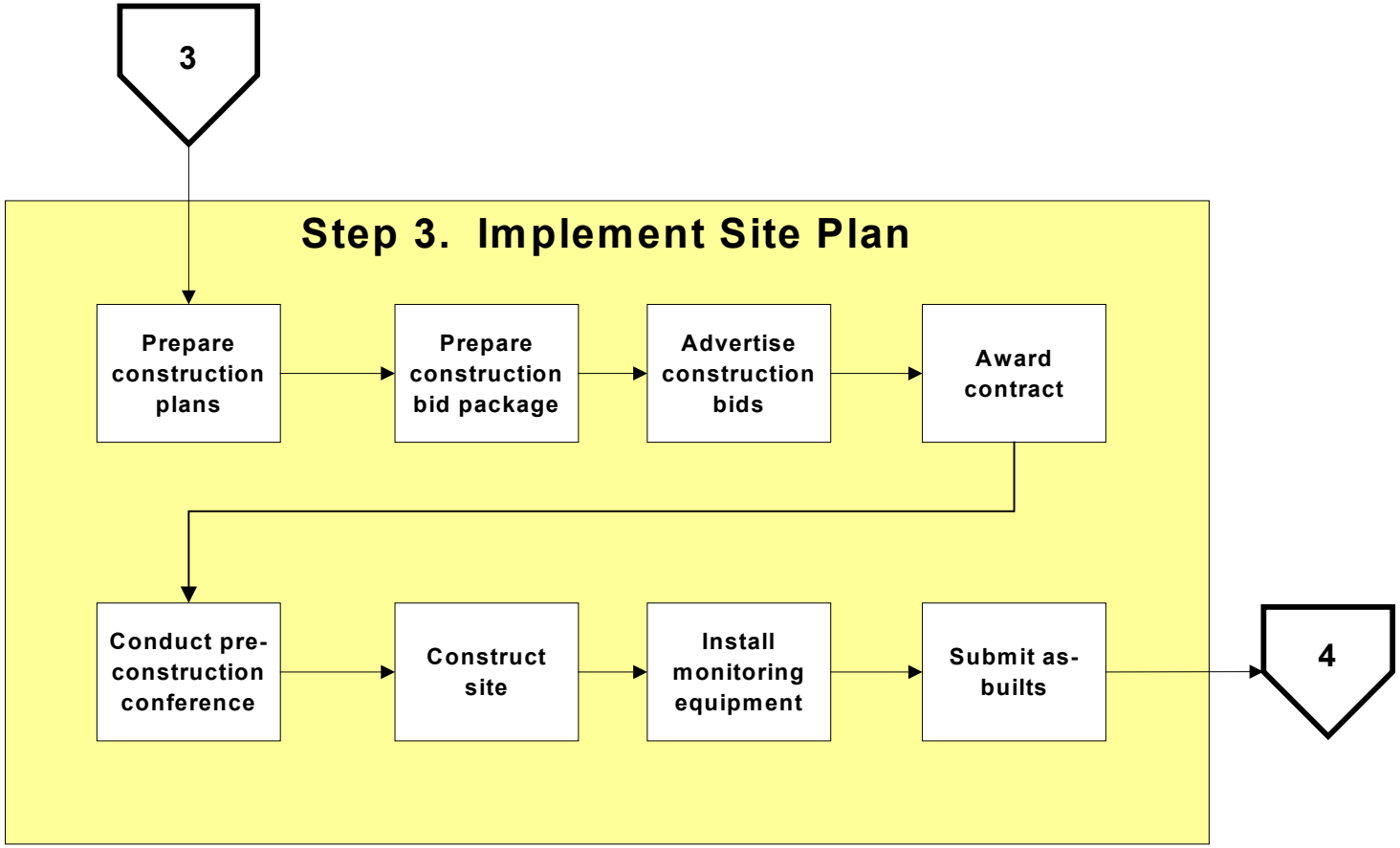

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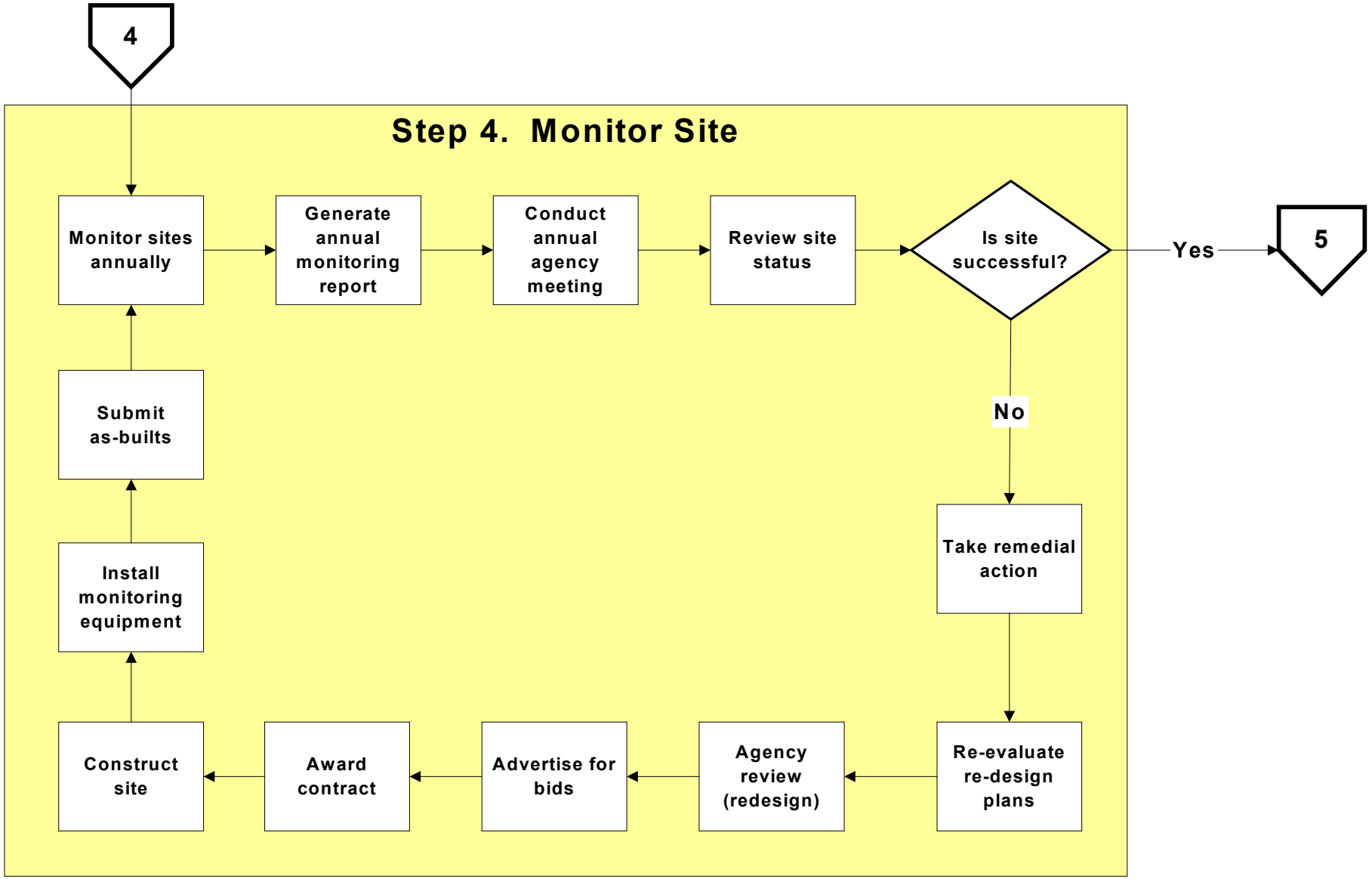

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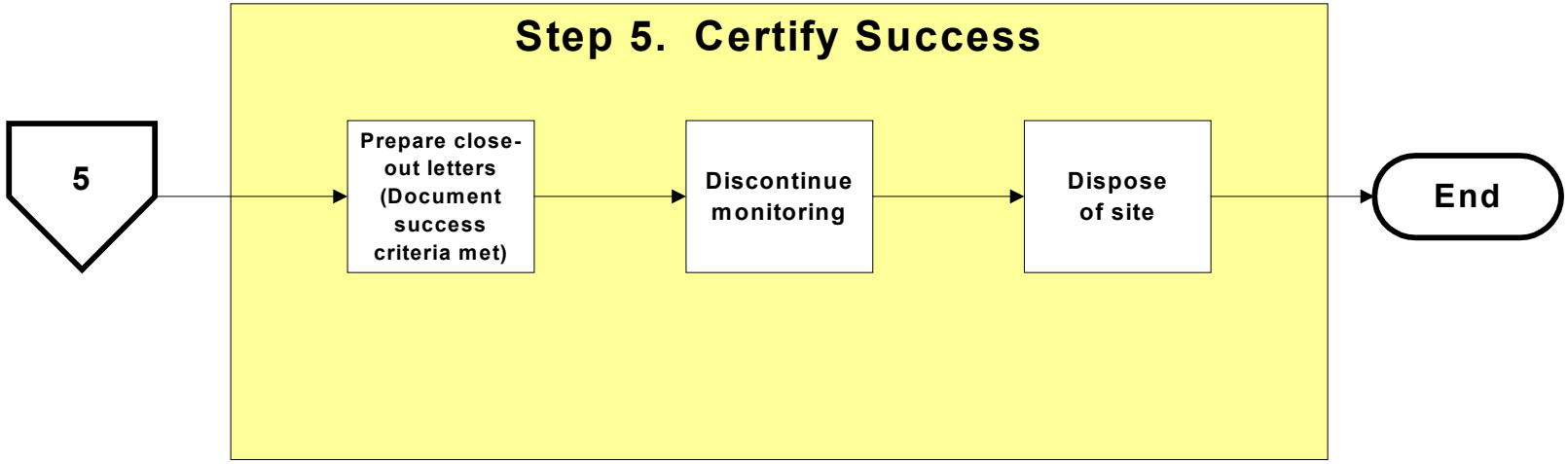


Revised Customer Value Structures (Modified Process)

Customer: NC Division of Coastal Management

Needs	Value %	Performance	Score	Gap
Mitigation plans contain sufficient data to evaluate the site and compare it to the impacts	35	0.8	28	7
Submitted mitigation plans are consistent with local land use plans	15	0.9	13.5	1.5
Agencies coordinate the review of mitigation plans	10	0.9	9	1
The review process is standardized, defined and streamlined with adequate allocation of staff and resources	10	0.8	8	2
Data is provided showing that sites are similar to natural wetlands, that sites provide wetland functions within a watershed and are meeting a goal of “no net loss” of wetland functions and area (up front mitigation)	30	0.8	24	6
Totals	100%		82.5	17.5

Revised Customer Value Structures (Modified Process)

Customer: NC Division of Marine Fisheries

Needs	Value %	Performance	Score	Gap
Provide specific, measurable results	20	0.7	14	6
Full functional replacement of loss	30	0.4	12	18
Mitigation in place as initial project phase	30	0.4	12	18
Enforceable commitment that mitigation, if unsuccessful, will be done over	20	0.8	16	4
Totals	100%		91	46

Revised Customer Value Structures (Modified Process)

Customer: NC Department of Transportation

Needs	Value %	Performance	Score	Gap
Proper site selection	15	0.8	12	3
Staff needs to implement program (mitigation)	30	1.0	30	0
Consistent guidance by agencies	30	0.8	24	6
Flexible mitigation	10	0.8	8	2
Partnership with agencies	15	0.8	12	3
Totals	100%		86	14

Revised Customer Value Structures (Modified Process)

Customer: NC Division of Water Quality

Needs	Value %	Performance	Score	Gap
Provide 1:1 restoration /creation	50	0.8	40	10
Select mitigation sites with high likelihood of success	20	0.8	16	4
Select mitigation sites with highest watershed benefits	5	1.2	1	4
Mitigation begin before impact	5	0.6	3	2
Prepare acceptable stream mitigation plans	20	0.6	12	8
Totals	100%		72	28

Revised Customer Value Structures (Modified Process)

Customer: NC Wildlife Resources Commission

Needs	Value %	Performance	Score	Gap
Replacement of lost functions	40	0.8	32	8
Timing of mitigation vs. impacts	20	0.1	2	18
Proper/good site selection	15	0.5	7.5	7.5
Success of mitigation measurable and attainable	15	0.8	12	3
Dispensation to public entity	10	0.3	3	7
Totals	100%		56.5	43.5

Revised Customer Value Structures (Modified Process)

Customer: US Army Corps of Engineers

Needs	Value %	Performance	Score	Gap
Need for mitigation that provides for functional replacement	50% (should be higher)	0.8	40	10
Consistent and predictable process for the development of plans	30%	0.3	24	6
Delivery of final approved plans before permit is needed	10%	N/A	N/A	N/A
Mitigation site construction and monitoring	10%	0.3	3	7
Totals	100%		67	23

Revised Customer Value Structures (Modified Process)

Customer: US Environmental Protection Agency

Needs	Value %	Performance	Score	Gap
Standard operating procedures or guidelines for mitigation in NC	30	0.8	24	6
Functional replacement (method for measuring and ensuring)	45	0.8	36	9
Early planning and mitigation planning	25	0.4	10	15
Totals	100%		70	30

Revised Customer Value Structures (Modified Process)

Customer: US Fish and Wildlife Service

Needs	Value %	Performance	Score	Gap
Receiving mitigation before impacts occur	40	0.8	32	8
Identify/acquire mitigation that mirrors the loss (commiserate with impacts)	20	0.9	18	2
Ecologically rather than site based	20	0.8	16	4
Monitoring (more complex, longer term)	20	0.6	12	8
Totals	100%		78	22

Revised Customer Value Structures (Modified Process)

Customer: NC Wetland Restoration Program

Needs	Value %	Performance	Score	Gap
Identification of impacts	10	0.5	5	5
Identify, evaluate and select sites	40	0.4	16	24
Develop site specific mitigation plan	20	0.6	12	8
Construct site specific mitigation plan	25	0.6	15	10
Monitor mitigation site	5	0.6	3	2
Totals	100%		51	49

Assumptions (Modified Process)

- During transition, functional assessment is experimental.
- DOT provides adequate information in mitigation plan for COE authorization (to construct mitigation site).

Summary of Benefits (Modified Process)

- More predictable process (Standard Operating Procedures, definition)
- Functional assessment criteria
- Mitigation and site approval = mitigation permit approval
- Saves 480 hours for sure (maybe 5 times that)
- Decrease time + increase “let” delivery
- Potential for better mitigation ratio for impacts (saves money)
- More reliability in replacing sites
- More successful sites
- Common direction and focus among agencies
- Projects done quicker with lower legislative pressure
- Standard Operating Procedures/definitions reduce conflicts and increase efficiency

Barriers to Implementation (Modified Process)

- Resources to implement in concert with short time period
  - DOT to provide RSC's to agency and DOT
  - Establish resources and cost, time based critical path coordinated with RSC's agency
  - Spell out the trade-off needed on projects
  - Use invitational travel
- De-couple same people on both initiatives and multiple teams
- Existing policies, rules, regulations, and guidelines (Federal and State) conflict with sponsor expectations
- Changes in Legislation
- Changes in rules and policy
- Change in sponsor expectations
- Lack of knowledge (technical) to come up with a functional replacement program
- Adversarial and distrustful attitude of working staff of organization working together
- Developing a functional assessment that satisfies all organization
- Projects continue while we try to change process (immediate at expense of future)

Recommendations (Modified Process)

- = indicates formal recommendation

1.

- Approved functional assessment methodology
- Supplement watershed need plans to address other needs including habitat
- Develop functional mitigation guidelines
- Develop functional assessment acceptable to agencies
- Develop stream and wetland functional method
- Start using a functional assessment now to evaluate impacts and mitigation
- Decide on a functional methodology approach
- Functional assessment methodology
- Get agency (all) concurrence on a specific functional assessment method
- Standards for functional mitigation (37 votes)

- Develop:
  A) Functional assessment methodology standards and guidance acceptable to all agencies for use in mitigation planning which includes updated supplemental watershed need plans to address methodology regulations.
  B) Stream and wetland functional method and begin using the assessment now to evaluate impacts and mitigation.

2.

- Devote NCDOT team to the new process
- Adequate resources to address up-front mitigation needs
- Devote new staff resources to up-front mitigation
- Additional agency mitigation staff
- Additional DOT mitigation staff
- DOT should double environmental planning staff within 6 months
- Identify staffing requirements immediate, transition, and long term
- More staff at NCDOT to fulfill mitigation requirements
- Funding for additional agency staff (federal and state) (25 votes)

- Identify staffing needs and develop strategies to increase resources, including staff, within the agencies and the NCDOT for fulfillment of mitigation requirements.

3.

- Establish ratios for justified preservation sites (19 votes)

❑ Establish ratios for justified preservation sites.

4.

- Establish definition and protocols for mitigation concurrence points
- Implement mitigation concurrence points immediately
- Concurrence points in the mitigation process
- Implement concurrence method/process (19 votes)

❑ Establish definition, process, and requirements for meeting mitigation concurrence points immediately.

5.

- Agencies develop a list of guidelines for acceptable mitigation to be used by DOT in their up-front and non-project specific sites
- Incorporate standard operating procedures guidance from agencies for mitigation sites
- Standard operating procedures for contents of mitigation plans
- Develop standard operating procedures for various attributes early in the process
- Refine wetland mitigation standard operating procedures
- Refine stream mitigation standard operating procedures
- Wetland Restoration Program develop mitigation standards in cooperation with agencies
- Agencies develop written standard operating procedures, guidance documents, and functional assessment method by April 02
- Dealing with the “other” category (bridges, culverts, farmer equipment) (18 votes)

❑ Agencies develop a list of guidelines and standard operating procedures for acceptable mitigation to be used by DOT in its up-front and non-project specific sites. This includes but is not limited to:

A) Standard operating procedure guidance from agencies managing mitigation sites.
B) Standard operating procedures for contents of mitigation plans.
C) Wetland mitigation standard operating procedures.
D) Stream mitigation standard operating procedures.
E) Wetland Restoration Program mitigation standards.
F) Standard operating procedures for functional assessment by April 2002.
G) Standard operating procedures on dealing with “other” categories (bridges, culverts, farmer equipment).

6.

- Flexible mitigation strategies not only in writing, but accepted by the resource agencies
- List of approved flexible mitigation
- Allow flexibility in mitigation approach – use of preservation (10 votes)

❑ Formally define acceptable flexible mitigation strategies that are acceptable to all resource agencies. The strategy will include:

A) A list of approved flexible mitigation.
B) Allow preservation in lieu of restoration.

7.

- Design and implement a regional wetland reference data collection program now (9 votes)

❑ Design and implement a regional reference data collection program immediately.

8.

- Resources agency guidance that is consistent and not left up to interpretation (6 votes)

❑ Review and revise resource agency guidance that is not consistent and not reasonably clear.

(Additional Recommendations)

- Require a minimum of one year of hydraulic monitoring before writing a mitigation plan (3 votes)

- NCDOT management acknowledge/allow let dates to slip if mitigation not ready (2 votes)

- Establish standards for success criteria (i.e., reference sites)
- Consistent guidelines from agencies to minimize “re-do’s” on mitigation plans (i.e., methodology and site data needed, success criteria, etc.) (2 votes)

- NCDOT does not pay consultant until site is declared a success (2 votes)

- Issues CAMA blanket permit/consistency for mitigation implementation (NWP 27)
- Develop CAMA general permit for mitigation sites (2 votes)

- Formal written mitigation approval (1 vote)

- Mitigation plan transmittal includes information needed to authorize permit

- Develop general certification for mitigation approval at plan approval

- Streamlining methods for DWQ/CAMA approval of mitigation plan

- Mitigation goals clearly stated in plan

- Standard operating procedures for site planning
- More streamlined MBI process
- Formal coordination method and guidelines (early but less than present)
- Experiments in: flexible mitigation, up front mitigation, credits, functional/traditional assessments
- Develop protocol for acceptance of preservation sites
- Set clocks for agency response for decisions
- Need standards as to what constitutes acceptable mitigation
- Move all mitigation to Wetlands Restoration Program now
- Risk on both sides – DOT (early mitigation with less consulting - not checking off by agencies) and DENR (risk and explaining to the judge)
- Develop training for all to follow
- NCDOT assumes risk (based on standard operating procedures guidance) and develops proactive up-front mitigation program
- NCDOT accepts more risk
- Ranges/timelines of projects and where they fit into the process
- Elect Charles Bruton to head up the EEP
- Better ratios to encourage preservation

Design New Process

- Redesign Ideas
- High Level To-Be Process Map
- Detailed Level To-Be Process Map
- Flow Item
- Revised Cost-Time Profile (To-Be Processes)
- Revised Customer Value Structures (To-Be Processes)
- Key Assumption
- Assumptions

Redesign Ideas

Definition of new process: **Develop a formalized mitigation process that satisfies regulatory requirements and ecological goals**

Functional Replacement
- Establish replacement of functional loss as goal for overall mitigation process
- Mitigation should not be one-functional
- Watershed level assessments need to be managed in landscape or “ecological” enhancement or “eco-regional” context
- Incorporate functional assessment into impact and mitigation accounting

Functional Assessment
- Holistic approach to mitigation needed not just streams wetlands and buffers
- Look at success of site as a whole, not just acre for acre
- Agencies / public follow process (already established) to determine the functional needs of each watershed

Watershed Context
- DOT / WRP / other agencies target mitigation sites or activities to address specific watershed needs
- Adopt a watershed approach for determining mitigation requirements, i.e., what is best for watershed
- Agencies review all proposed/on-going mitigation projects within a specific watershed
- Agencies review/approve mitigation plans for a watershed based on functional needs and what has already been done / proposed
- WRP and DOT will work cooperatively to direct a statewide local watershed planing process and use existing DOT staff to augment the program. The objective would be to use LWP’s to expedite an aggressive advance mitigation program
- DOT and WRP should agree on developing a statewide local watershed planning process that addresses functional replacement of unavoidable impacts

Redesign Ideas (cont'd)

Coordination, Concurrence, and Approvals

- Establish a series of concurrence points for the mitigation process whereby the agencies approve the steps / points and the process moves on without looking back; concurrence points: Sites Selection; Feasibility Study; Approved Plan (include credit amount); Approve Implementation; Certification of Success
- Mitigation process should be tied to merger process
- Given the number of options available to NCDOT, some agreements from agencies as to what option is acceptable
- Precise "check-offs" during the mitigation process where concurrence is given from agencies
- Agencies and DOT meet to discuss all projects on TIP within a specific watershed
- Allow / encourage agencies to "pre-approve" mitigation sites

General Approach

- More emphasis / credit on preservation of wetlands and streams
- Preservation should be cornerstone of mitigation effort
- Mitigation should be comprehensive, less project specific, in order to allow an ecosystem approach
- DOT should compensate for all impacts – even upland habitat for wildlife – Environmental Stewardship
- Address worsening situation with shortfall in stream mitigation
- Ecosystem Enhancement Program
- Technical oversight committee to work on definition and standardization of methodologies (not ties to current process)

Stakeholder Involvement

- Develop mitigation plans with involvement of local government, communities, environmental groups and academic community
- Mitigation could be identified through more public involvement, division involvement, and academic involvement
- Develop process to involve public in mitigation process
- Provide public input and comment in revised process
- Include the academic community in every step of the mitigation process

Redesign Ideas (cont'd)

- All resource agencies need to participate in watershed landscape assessment (and identification of broad scale mitigation projects) so that their mitigation needs are met

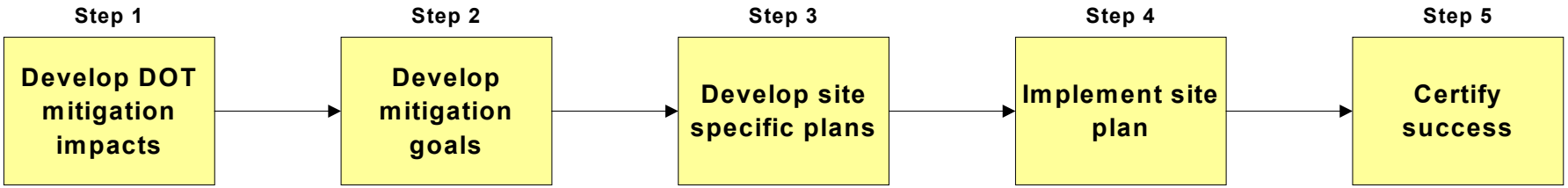
Data
- Build time into the process to collect baseline data

Flexible Mitigation
- Mitigation initiatives include flexible options
- Allow mitigation to be more flexible
- Use out of basin sites if good sites; geographical boundaries need some flexibility
- Wetland and stream impacts should be addressed programmatically, not project by project

Success Criteria
- Need a mechanism to address failure of sites

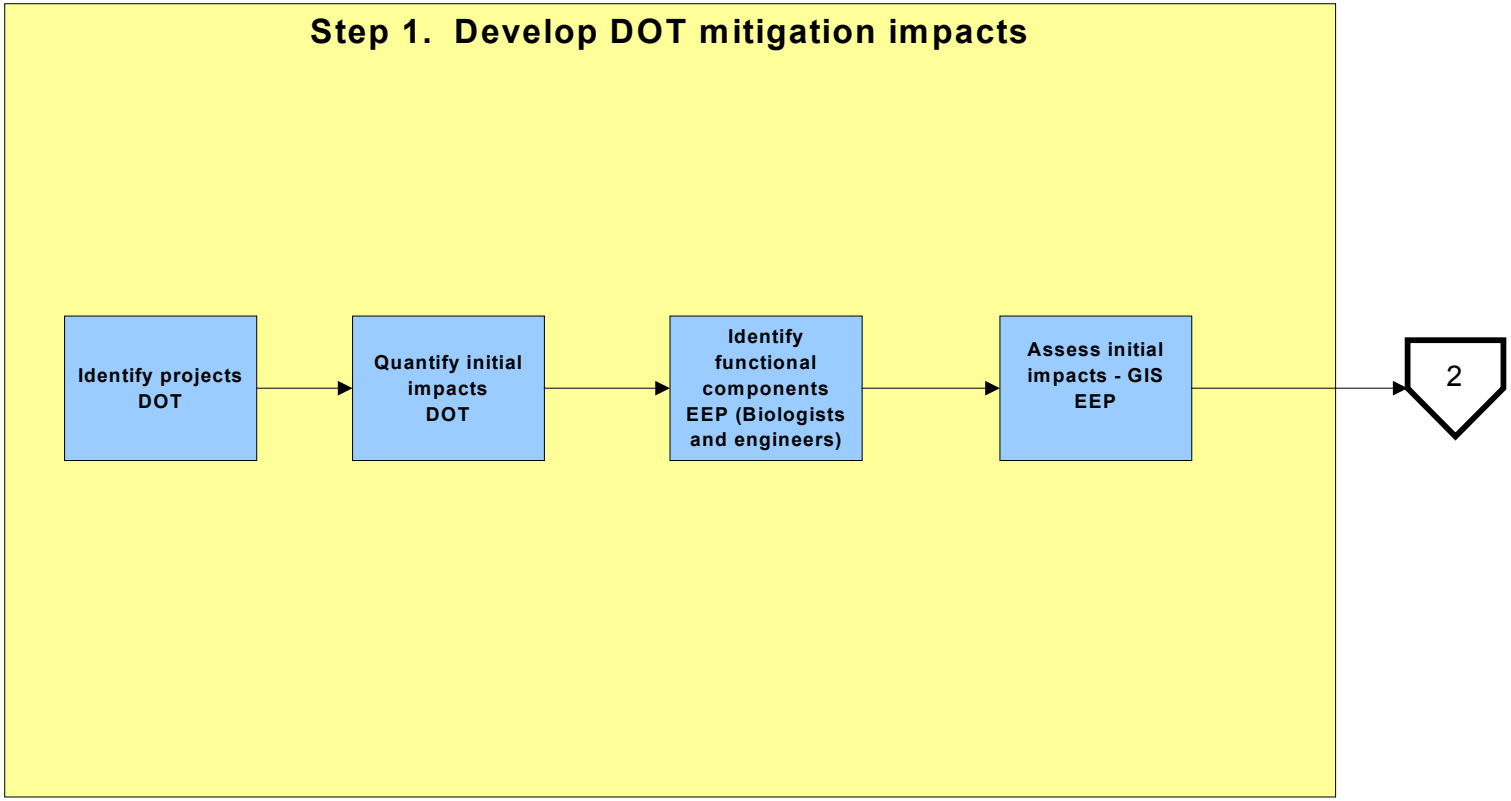
High Level To-Be Process Map

Process Redesign: Mitigation Process
Process outcome: A programmatic process that provides functional replacement at the watershed level for ecosystem impacts of transportation development



NEW PROCESS

Detailed Level To-Be Process Map

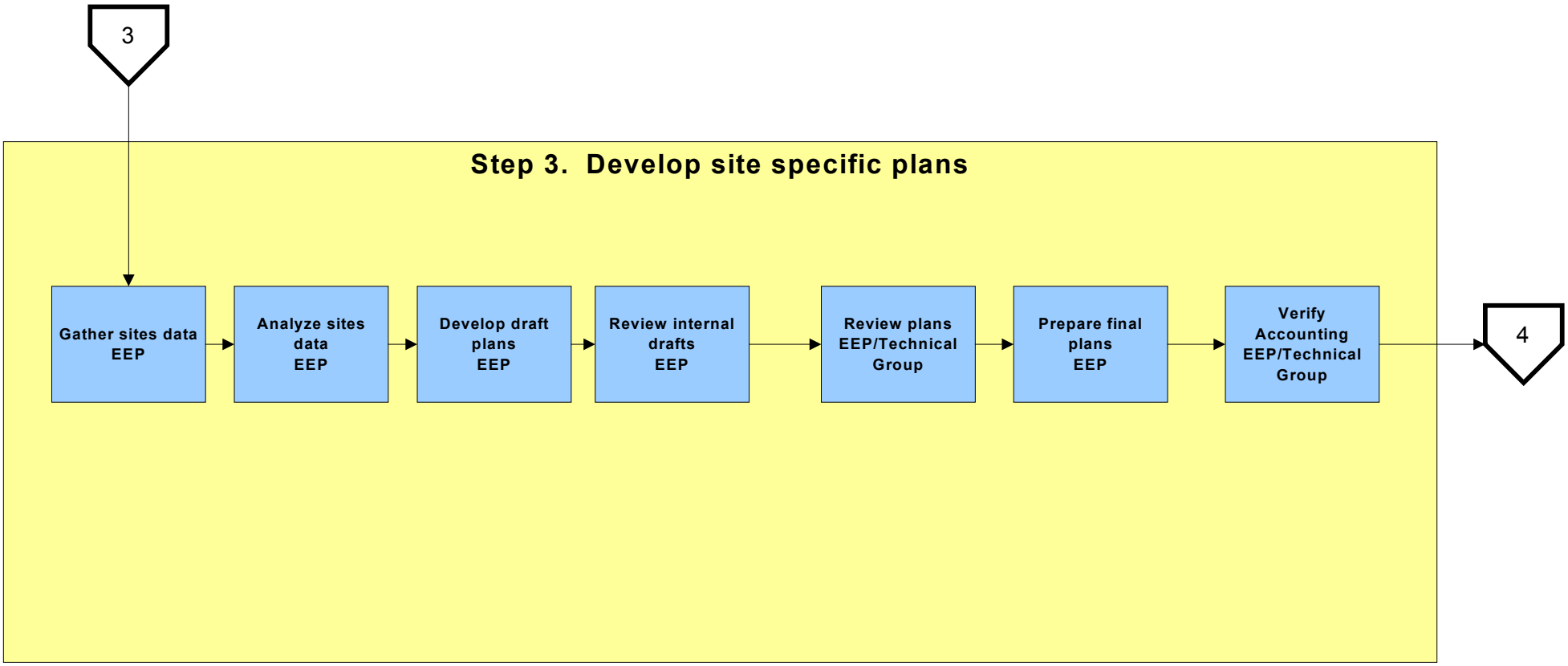


NEW PROCESS

Detailed Level To-Be Process Map

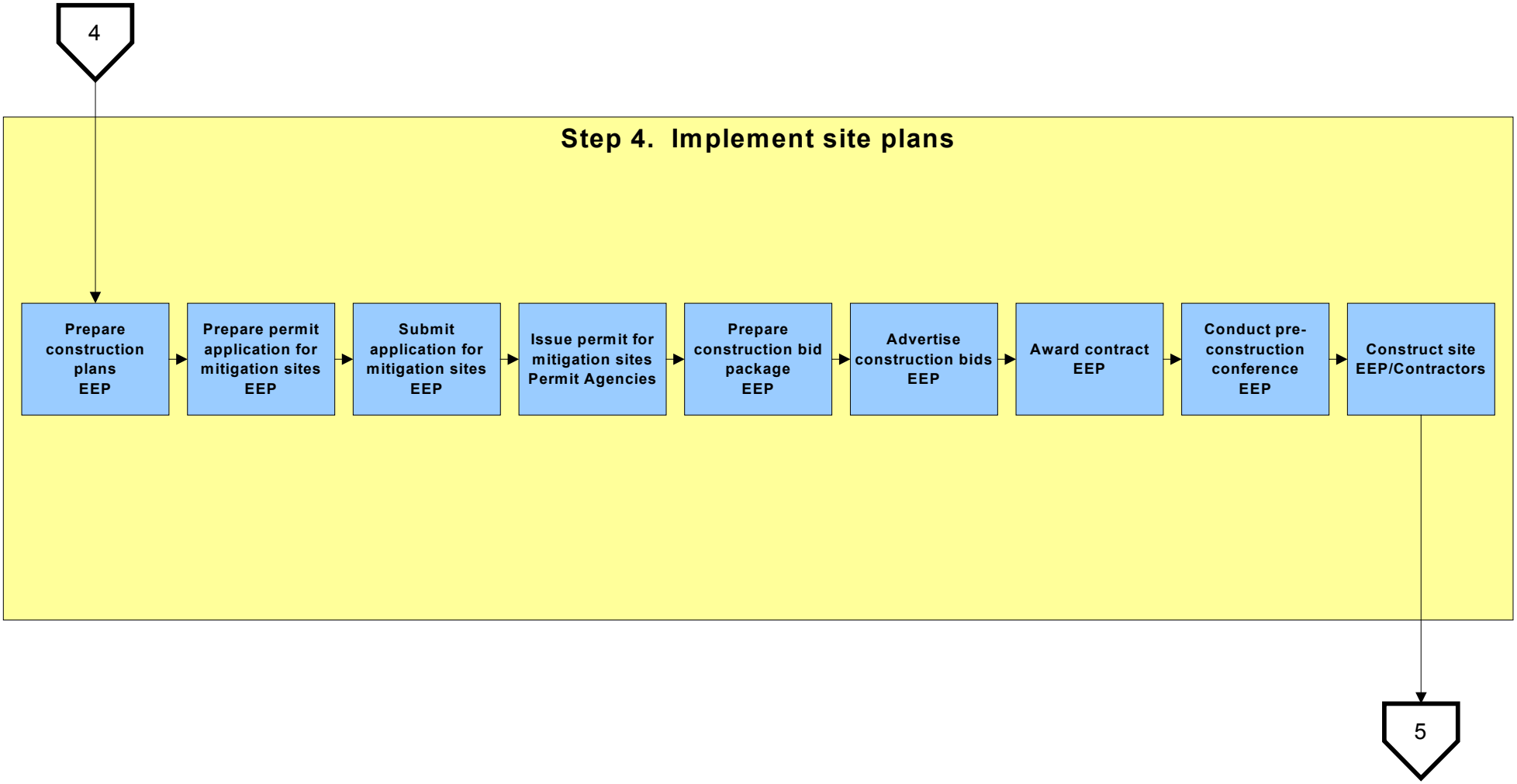
NEW PROCESS

Detailed Level To-Be Process Map



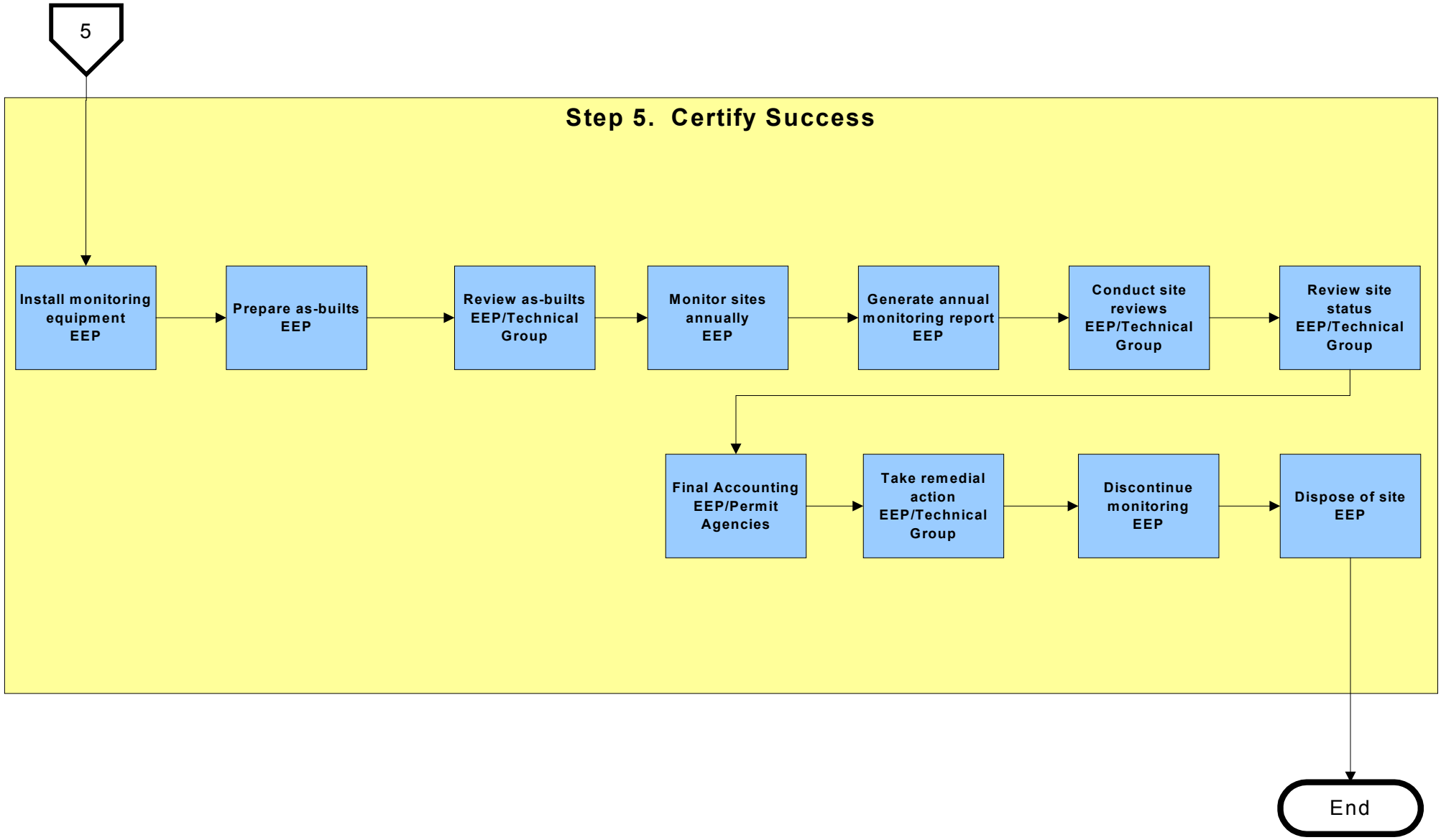
NEW PROCESS

Detailed Level To-Be Process Map



NEW PROCESS

Detailed Level To-Be Process Map

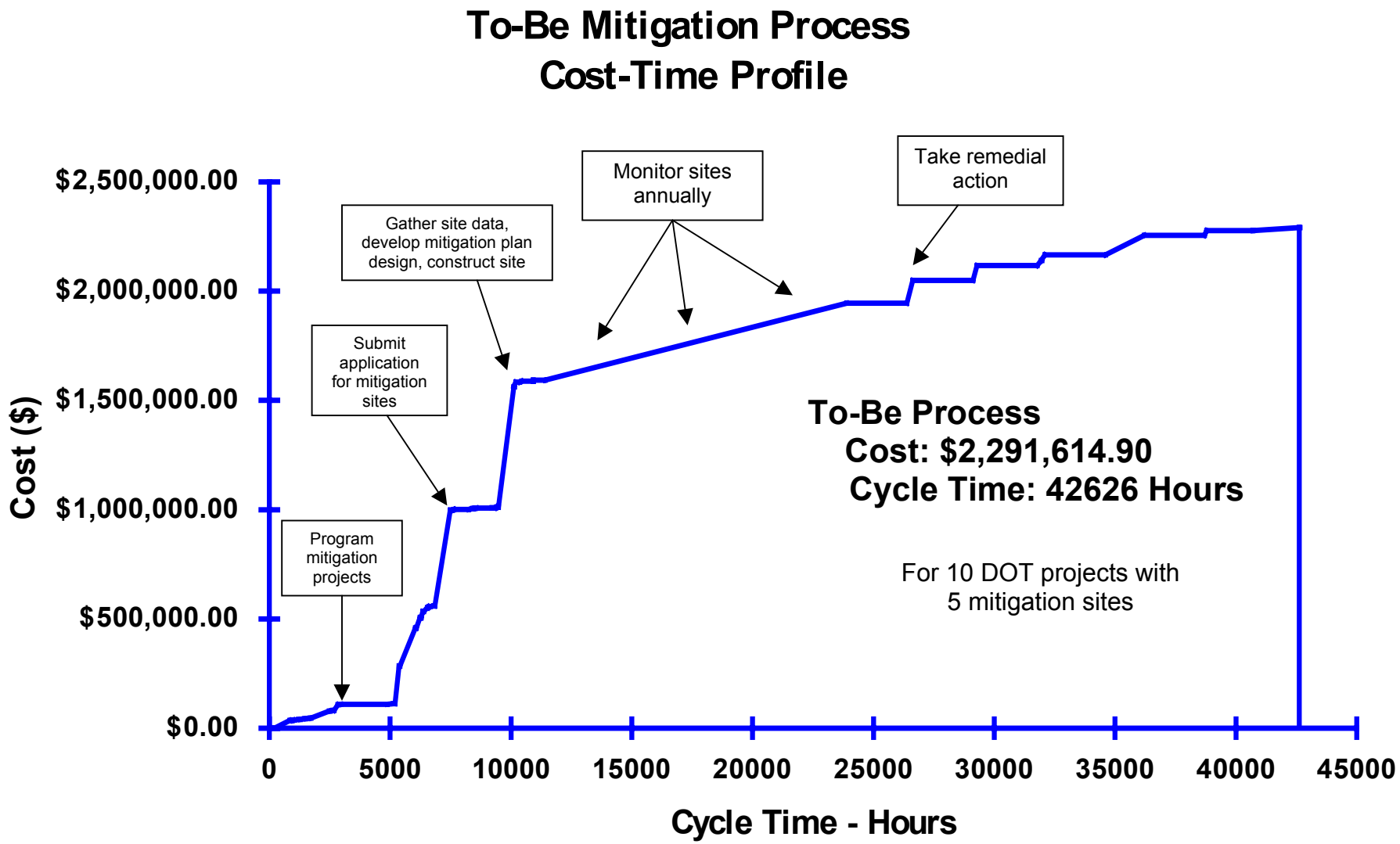


NEW PROCESS

Flow Item

- Group of Projects (TIP) within an eight-digit catalog unit
- Projects impact wetlands, streams, and buffers
- Impact area has habitat impacts
- CAMA county impacts
- Remedial action required
- Changes in impact occur throughout process

Revised Cost-Time Profile (To-Be Process)



NEW PROCESS

Revised Customer Value Structures

Customer: NC Division of Coastal Management

Needs	Value %	Performance	Score	Gap
Mitigation plans contain sufficient data to evaluate the site and compare it to the impacts	35	0.8	28	7
Submitted mitigation plans are consistent with local land use plans	15	0.8	12	3
Agencies coordinate the review of mitigation plans	10	1	10	0
The review process is standardized, defined and streamlined with adequate allocation of staff and resources	10	0.9	9	1
Data is provided showing that sites are similar to natural wetlands, that sites provide wetland functions within a watershed and are meeting a goal of “no net loss” of wetland functions and area (up front mitigation)	30	0.7	21	9
Totals	100%	4.2	80	20

NEW PROCESS

Revised Customer Value Structures

Customer: NC Division of Marine Fisheries

Needs	Value %	Performance	Score	Gap
Provide specific, measurable results	20	1.0	20	0
Full functional replacement of loss	30	0.8	24	6
Mitigation in place as initial project phase	30	0.9	27	3
Enforceable commitment that mitigation, if unsuccessful, will be done over	20	1.0	20	0
Totals	100%	3.7	91	9

Revised Customer Value Structures

Customer: NC Department of Transportation

Needs	Value %	Performance	Score	Gap
Proper site selection	15	0.8	12	3
Staff needs to implement program (mitigation)	30	1.0	30	0
Consistent guidance by agencies	30	0.8	24	6
Flexible mitigation	10	0.5	5	5
Partnership with agencies	15	1.0	15	0
Totals	100%	4.1	35.5	14

Revised Customer Value Structures

Customer: NC Division of Water Quality

Needs	Value %	Performance	Score	Gap
Provide 1:1 restoration /creation	50	0.4	25	25
Select mitigation sites with high likelihood of success	20	0.8	16	4
Select mitigation sites with highest watershed benefits	5	1.0	5	0
Mitigation begin before impact	5	0.5	2.5	2.5
Prepare acceptable stream mitigation plans	20	1.0	20	0
Totals	100%	3.7	68.5	31.5

Revised Customer Value Structures

Customer: NC Wildlife Resources Commission

Needs	Value %	Performance	Score	Gap
Replacement of lost functions	40	0.8	32	8
Timing of mitigation vs. impacts	20	1.0	20	0
Proper/good site selection	15	0.9	13.5	1.5
Success of mitigation measurable and attainable	15	0.8	12	3
Dispensation to public entity	10	0.9	9	1
Totals	100%	4.4	86.5	13.5

Revised Customer Value Structures

Customer: US Army Corps of Engineers

Needs	Value %	Performance	Score	Gap
Need for mitigation that provides for functional replacement	50% (should be higher)	0.5	25	25
Consistent and predictable process for the development of plans	30%	0.8	24	6
Delivery of final approved plans before permit is needed	10%	N/A	N/A	N/A
Mitigation site construction and monitoring	10%	0.8	8	2
Totals	100%	2.1	57	33

Revised Customer Value Structures

Customer: US Environmental Protection Agency

Needs	Value %	Performance	Score	Gap
Standard operating procedures or guidelines for mitigation in NC	30	0.9	27	3
Functional replacement (method for measuring and ensuring)	45	0.8	36	9
Early planning and mitigation planning	25	0.9	22.5	2.5
Totals	100%	2.6	85.5	14.5

Revised Customer Value Structures

Customer: US Fish and Wildlife Service

Needs	Value %	Performance	Score	Gap
Receiving mitigation before impacts occur	40	0.8	32	8
Identify/acquire mitigation that mirrors the loss (commiserate with impacts)	20	0.6	12	8
Ecologically rather than site based	20	0.9	18	2
Monitoring (more complex, longer term)	20	0.6	12	8
Totals	100%	0.6	74	26

Revised Customer Value Structures

Customer: NC Wetland Restoration Program

Needs	Value %	Performance	Score	Gap
Identification of impacts	10	0.8	8	2
Identify, evaluate and select sites	40	0.9	36	4
Develop site specific mitigation plan	20	0.9	18	2
Construct site specific mitigation plan	25	0.8	20	5
Monitor mitigation site	5	0.9	4.5	0.5
Totals	100%	2.1	80	11.5

Key Assumption

DOT, DENR, and COE concur that prior to executing the mitigation process improvement implementation plan, these agencies will mutually adopt a list of high quality resources and jointly develop a framework for addressing how those high quality resources will be avoided during transportation planning and project development.

Assumptions

- Flow items passes FS stage
- ROW (intent and purchase floats)
- Monitoring occurs a minimum of five years
- Permit issuance for mitigation site and project construction occur simultaneously
- Watershed plan does exist
- One oversight group is responsible for Ecological Enhancement Program (EEP)
- Resources (funding and staff) are allocated for program
- Once EEP accepts impacts, DOT off the hook on a permit by permit basis
- DOT is represented on EEP
- MOU provides for accounting system that ensures permits are defensible
- Management Infrastructure (interagency groups) established
- Staffing requirements met
- Five R's (roles, responsibilities, relationships, rules, resources) of participating agencies defined
- Technical definitions completed and common terms defined (functional replacement, watershed, etc.)
- Watershed planning is a supporting process supplying product into beginning of new process
- Impacts are identified by GIS
- Strategic plan is committed
- Develop strategic assessment (5 year review is done)

New Process Implementation

- Summary of Benefits
- Barriers to Implementation
- Recommendations
- High Level Implementation Plans
- Detailed Level Implementation Plans

Summary of Benefits

- The new process removes compensatory mitigation from the TIP let schedule and moves compensatory mitigation construction years earlier. Will help us move forward toward our up-front mitigation goal.
- Multiple project impacts addressed in a comprehensive manner through multiple mitigation projects targeted to address overall watershed concerns.
- Ultimately eliminates delay of projects due to mitigation issues.
- Reduces workload and stress on permitting staffs of all agencies.
- A minimum of $250 million dollars worth of projects annually would not be delayed.
- Ecological effect of compensatory mitigation is dramatically improved through multi-agency involvement and watershed level planning / implementation.
- Potential to allow program to facilitate environmental stewardship.

Barriers to Implementation

- Resources to implement in concert with short time period
  - DOT to provide RSC's to agency and DOT
  - Establish resources and cost, time based critical path coordinated with RSC's agency
  - Spell out the trade-off needed on projects
  - Use invitational travel
- De-couple same people on both initiatives and multiple teams
- Existing policies, rules, regulations, and guidelines (Federal and State) conflict with sponsor expectations
- Changes in Legislation
- Changes in rules and policy
- Change in sponsor expectations
- Lack of knowledge (technical) to come up with a functional replacement program.
- Adversarial and distrustful attitude of working staff of organization working together
- Developing a functional assessment that satisfies all organization
- Projects continue while we try to change process (immediate at expense of future)

Recommendations – Implementation Workshop

- Develop MOU outlining new process that includes:
  - Roles of all participating agencies
  - Accounting system that ensures permits are defensible
  - Process that allows issuance of transportation projects provided regulatory requirements are met
  - Commitment by agencies to support process

- Establishment of the Ecosystem Enhancement Program that is responsible and accountable for DOT mitigation with oversight by:
  - Policy group to sponsor program reviews and establish policies and goals
  - Technical group to provide guidance, definitions and technical review of project and overall success

- A high-quality resource list is adopted and a framework developed to address it is completed prior to process implementation

- Flexible mitigation to provide functional replacement and preservation of resources at risk

- To make this happen:
  - Adequate resources for new program (staff and money)
  - Adequate resources for existing program (staff)
  - Adequate resources in agencies to support new program
  - Development of watershed plans must begin immediately

Recommendations – Implementation Workshop (cont'd)

- Sponsors commit to switch to a programmatic approach for compensatory mitigation (rather than project-by-project)
- Funding mechanism be established for the Ecosystem Enhancement Program that provides for the functional replacement of transportation development impacts at the watershed level
- Sponsors provide facilitated development of management and program, and development of strategic plan for new process
- Sponsors endorse de-coupling mitigation from permits in exchange for assurance that the new program will adequately address and be accountable for mitigation requirements for transportation project impacts accepted into the program
- Sponsors agree the implementation of new process will not compromise avoidance and minimization requirements

High Level Implementation Plans

Process Name: Mitigation Process Improvement

ID	Project	Team Leader(s)	Team Members	Start Date	End Date
1	Develop: A) Functional assessment methodology standards and guidance acceptable to all agencies for use in mitigation and B) Stream and wetland functional method and begin using the assessment to evaluate impacts and mitigation (to be developed by end of January 2002 and implemented by May 2002).	John Dorney (DWQ) LeiLani Paugh (DOT)	COE, USFWS, WRP, EPA, Academics(Mark Brinson/ECU, Kevin Moorhead/UNCA), Kelly Williams (DCM), Jared Gray, Byron Moore (DOT), Randy Turner (DOT)	January 2002	May 2002
2	Identify staffing needs and develop strategies to increase/reallocate resources, including staffing, within the agencies and the NCDOT for fulfillment to mitigation implementation.	Phil Harris (DOT) (liaison with Permitting Resource Team for mitigation)	Same as Permit Improvement Process Resource Team (with addition of COE representative)	November 2001	Same as permit team
3	Develop mitigation concurrence point process linked to NEPA/404 Merger 01 Process that provides a progressive, step-wise decision-making system that addresses compensatory mitigation requirements.	David Franklin (COE)	LeiLani Paugh (DOT), Chris Militscher (EPA), Cyndi Karoly (DWQ), David Cox (NCWRC), Emily Lawton (FHWA), Cathy Brittingham, (DCM), Marella Buncick (USFWS),		

High Level Implementation Plans (cont'd)

Process Name: Mitigation Process Improvement

ID	Project	Team Leader	Team Members	Start Date	End Date
4	Define contents and format for mitigation process	Scott McLendon (COE)	V.C. Bruton (DOT), Kelly Williams (DCM), Ron Ferrell (WRP), John Dorney (DWQ), Dave Henderson (DOT), David Cox (DCM), Eric Alsmeyer (COE), Kathy Matthews (EPA), Marella Buncick (USFWS)		
5	Design and implement a regional reference data collection program for wetlands and streams by June 2002.	Kelly Williams (DCM)	WRP, EPA, COE, DOT(Randy Griffin, LeiLani Paugh), DWQ, WRC, USFWS, NHP, and additional expert participants as decided by team leader	June 2002	On-going
6	Refine watershed need assessment with input from all agencies.	Ron Ferrell (WRP)	Susan Klimek (WRP), Hal Bryson (WRP), Dave Schiller, (DOT), Frank McBride (NCWRC), Kelly Williams (DCM), Linda Pearsall (NHP), Scott McLendon (COE), Jennifer Derby (EPA), John Hammond (FWS), Mike Street (DMF)		

Detailed Level Implementation Plans – #1

Recommendation: Develop: A) Functional assessment methodology standards and guidance acceptable to all agencies for use in mitigation and B) Stream and wetland functional method & begin using the assessment to evaluate impacts and mitigation (to be developed by end of January '02 and implemented by May '02).

Opportunity/Problem Statement: There is no formal methodology to conduct functional assessments of streams and wetlands for permitting and compensatory mitigation. Current mitigation processes and methods are focused on projects as opposed to ecosystems and are not as flexible as they could be.

Project Description/Scope/Tasks: Develop a Functional Assessment Methodology, or methodologies, that evaluate the environmental status of Streams, Wetlands, and Estuarine waters to a degree acceptable by all mitigation stakeholders. The Team will analyze current stream and wetlands functional assessments to determine their utility as standard assessment methods. The Team will include a determination whether current assessment methodologies can be continued as part of the selected functional assessment method. For streams, those methods include but are not limited to the NRCS stream evaluation method as well as fish and benthic macroinvertebrate sampling. For Wetlands, those methods include but are not limited to the 4th and 5th versions of the Wetland Rating System and the NC-CREWS remote, GIS-based method. The following specific issues of wetland functions, stream if related , and accounting mechanisms will be made part of the assessment and methodology determination:

1. How can this method account for the value of upland areas, stream buffers, on-site stormwater, and other non-wetland mitigation on proposed compensatory mitigation sites?
2. How should preservation account for development pressure or potential risk in order to more accurately determine the value of preservation? A modification of the eventual accounting mechanism will be needed to satisfy this purpose.
3. Incorporating priority for high impact watersheds (lost > 10% of their wetlands, urban) into the accounting system.
4. The need for "caps" (either minimum or maximum) on: Preservation (When is preservation a solution?), in-kind, on-site mitigation (When are these needed?),
5. Accounting criteria (1:1?) for restoration and definition in terms of function.
6. Incorporating time delays and risk into mitigation success and the accounting mechanism

All current and identified methods will be evaluated using selected representative sample of sites using a subset of the methods selected above. The results of the evaluations should be compared to current historical results (i.e., macrobenthos results) as the baseline. The Team will use the evaluation results and established decision criteria to determine the stream and wetlands functional assessment methodology (or modifications to current methodologies) that best fosters ecologically reasonable stream mitigation and develop a plan for implementing it into the 404/401 Permit Program and Mitigation Programs. Different methods can be recommended for different physiographic regions, if required. Once a method(s) is selected, the Team will test them using current impact sites and proposed compensatory mitigation sites. The evaluation results and established decision criteria will be used to determine the stream and wetlands functional assessment methodology (or modifications to current methodologies) that best fosters ecologically reasonable stream and wetlands mitigation. An Implementation Plan will be developed for integrating the methods into the 404/401 Permit Program and Mitigation Programs.

The Team will also develop a suggested accounting method to quantify stream and wetlands impact sites and mitigation that is compatible with EPA requirements. The Team should consider the use of HUC units, extra value for sensitive waters, and restoration of fish spawning areas in developing the accounting systems.

The Team will also develop a training curriculum and training materials to support understanding and implementation of the selected functional assessment methodologies.

Project Leader(s): John Dorney and LeiLani Paugh	**Process Owner:** DWQ	
Team Members: COE, USFWS, WRP, EPA, Academics(Mark Brinson/ECU, Kevin Moorhead/UNCA), Kelly Williams, Jared Gray, Byron Moore, Randy Turner		
Potential Stakeholders: Resource Agencies, DOT, DENR (DWQ, DCM, Marine Fisheries), USACE		
Start Time: **January 2002**	**End Date:** May 2002	**Duration:** 5 Months
Dependencies: **Wetland Preservation Guidelines and Mitigation Standard Operating Procedures** **on the Job training or formal training**		
Resources: Data forms for old DOT Projects (v. 4.0 Wetland Restoration System [WRS] for impacts sites and associated mitigation sites) Data forms for Projects using v.5.0 WRS Existing macrobenthos data for monitored sites (Larry Eaton) NCCrews database (DCM) Literature on existing functional assessment methods EPA, WRRI or ITRE (Potential Funding)		
Project Deliverables: Complete defined Methodology for Stream Functional Assessment Complete defined Methodology for Wetland Functional Assessment Complete defined methodology for Functional Assessment of special cases such as lakes/ponds/estuarial waters Revised wetland rating system that incorporates field evaluations and GIS evaluations Accounting mechanism for establishing compensatory credits with criteria Mitigation monitoring requirements Technical training materials and curriculum, and schedule for conducting Stream, wetland, and special cases (e.g., estuarial waters) functional assessments Success Criteria (Quantitative and Qualitative) for both the evaluation method and the process of implementing the method(s). **Training Program, Materials Schedule** **SOP for conducting assessments**		

Detailed Level Implementation Plans – #2

Recommendation: Identify staffing needs and develop strategies to increase/reallocate resources, including staffing, within the agencies and the NCDOT for fulfillment to mitigation implementation.

Opportunity/Problem Statement:
It is concluded that the development of a functional assessment methodology, mitigation concurrence points linked to Merger 01, development of standard operating procedures and regional reference data system, and agency refinement of watershed needs, will streamline the mitigation process. As a result, there will be a short-term negative effect on operations and resource capacities of the agencies. Resources to effectively manage and execute the process need to be identified and allocated to achieve success.

Project Description/Scope/Tasks:
The team will be implemented into the permit resource team. Staff needs must be identified.
Task Merger 01 Resource Team to integrate this mitigation process into their resource analysis.
Specifically:
1. Increased staff
2. Increased efficiency
3. Workload reallocation
4. Reprogramming TIP for low impact project priorities

In addition, suggestions include but are not limited to:
A representative to lead new mitigation team on the 01 merger team
COE to be represented on Resource team
Steps to be included:
1. Assess new process needs
2. Assess improved process needs
3. develop staff loading plan
4. identify shortfall staffing…

Project Leader: Phil Harris (liaison with Permitting Resource Team for mitigation)	**Process Owner:** DOT/DENR/COE

Team Members:
Same as permit resource team

Potential Stakeholders Same as permit resource team		
Start Time: Nov. 2 2001	**End Date:** see permit resource team	**Duration:** see permit resource team
Dependencies: Recommendations from all other mitigation implementation teams. (and same as permit resource team)		
Resources: Same as permit resource team		
Project Deliverables: Same as permit resource team		

Detailed Level Implementation Plans – #3

Recommendation: Develop mitigation concurrence point process linked to NEPA/404 Merger 01 Process that provides a progressive, step-wise decision-making system that addresses compensatory mitigation requirements.

Opportunity/Problem Statement: Lack of standardized process for approval of mitigation plans with the 404/NEPA Merger 01 Process

Project Description/Scope/Tasks:

(1) Revisit efforts to date and improve, if necessary
(2) Map mitigation concurrence points into 404/NEPA Merger 01 Process flowchart
- Define and agree on concurrence points
- Plug concurrence points into process

(3) Training prior to implementation
(4) Define projects for which new process applies
(5) Develop evaluation criteria to determine effectiveness of process

Project Leader:	**Process Owner:**
David Franklin(COE)/Bill Gilmore(NCDOT)	COE/NCDOT/FHWA

Team Members: LeiLani Paugh (NCDOT), Chris Militscher (EPA), Cyndi Karoly (DWQ), David Cox (NCWRC), Emily Lawton (FHWA), Cathy Brittingham, (DCM), Marella Buncick (USFWS),

Potential Stakeholders: NMFS, DMF, WRP, SHPO

Start Time:	**End Date:**	**Duration:** 9 months

Dependencies:
- Availability of staff
- Education of staff of Merger 01 Process

Resources: Bill Arrington (DCM), Beth Barnes (DWQ), Jean Manuele (COE), Training Team for Merger 01 Process , Marella Buncick (USFWS)

Project Deliverables:
- Concurrence points for mitigation
- Defined process for mitigation concurrence points, including a map/flowchart of the process

Detailed Level Implementation Plans – #4

Recommendation: Define contents and format for mitigation process

Opportunity/Problem Statement: There is a lack of understanding of what regulatory agencies want/need/require in mitigation plans. This results in misunderstanding, permit or project delays, and unsatisfactory mitigation sites.

Project Description/Scope/Tasks:

The team will:

1. Prepare an outline of the "How-To" manual
   - ♦ Section I. Elements of a Mitigation Plan (including but not limited to):
     - Goals of the mitigation project
     - Baseline conditions
     - Success criteria
     - Site Alterations
     - Water Budget
     - Planting Plan
     - Monitoring
     - Disposition
     - Functional Assessment of the mitigation site
     - Other
   - ♦ Section II. Preservation Guidelines
2. Break into subgroups to develop the various sections/chapters within the manual
   - Develop a process to identify flexible mitigation opportunities
   - Develop guidelines for acceptable use of preservation (from all resource agencies)
   - Identify parameters/issues involved with decision-making (i.e., credit generation, causeway removal, etc)
3. Implement review process

Project Leader: Scott McClendon	**Process Owner**: Craig Deal (?)

Team Members: V.C. Bruton, Kelly Williams, Ron Ferrell, John Dorney, Dave Henderson, David Cox, Eric Alsmeyer, Kathy Matthews, Marella Buncick

This is a high-level coordination team that will be responsible for pulling in additional staff as needed.

Potential Stakeholders: Roger Sheats (NCDOT), Dempsey Benton (NCDENR), Wayne Wright (USACE), George W. Bush (USFWS, FHWA, EPA)		
Start Time: See Dependencies	**End Date: Not specified**	**Duration: 1 year**
Dependencies: ▪ Functional Assessment methodology must be complete ▪ Dam removal team must complete study (results will feed into Flexible Mitigation Subteam) ▪ Ecological Enhancement Committee must complete study (results will feed into Flexible Mitigation Subteam) ▪ Must be consistent with USACE policy and all other agencies' rules and regulations		
Resources: ▪ Availability of staff to serve on process improvement teams without work stoppage ▪ Full-time participation of two staff members per agency to develop SOP and review **And/or** ▪ **Outsourcing to private entity for development and review (still requires significant staff commitment)**		
Project Deliverables: A "How-To" /guidance manual which includes examples, references, checklists, and lists of resources. The layout should facilitate quick reference by using tabs or electronic keywords. May be hardcopy, CD, and or web-based.		

Detailed Level Implementation Plans – #5

Recommendation: Design and implement a regional reference data collection program for wetlands and streams by June 2002.		
Opportunity/Problem Statement: There is a lack of complete regional reference data system. No one has compiled data for data analysis (not organized). No one knows how to use it because there is a lack of reference based success criteria.		
Project Description/Scope/Tasks: Identify existing reference data. Compile and analyze existing reference data. Identify and address short falls in existing data. Develop a range of statistically valid success criteria that is based on reference data.		
Project Leader: Kelly Williams	**Process Owner:** USACE or Natural Heritage Program	
Team Members: WRP, EPA, COE, DOT(Randy Griffin, LeiLani Paugh), DWQ, WRC, USFWS, NHP, and additional expert participants as decided by team leader		
Potential Stakeholders: Citizens, development community and resource agencies,		
Start Time: June 2002	**End Date:**	**Duration:** on-going
Dependencies: Existing data **Continuous output of data from team** Funding		
Resources: Developed as team proceeds		
Project Deliverables: A sole source of reference data Accepted regional reference based success criteria Setting up database/outlet for the criteria referenced		

Detailed Level Implementation Plans – #6

Recommendation: Refine watershed need assessment with input from all agencies.

Opportunity/Problem Statement: Current watershed plans are based mainly on water quality issues and do not reflect the goals/objectives of other resource agencies.

Project Description/Scope/Tasks:

1. Educate the agencies on the current process
2. Evaluate current process
3. Identify areas of improvement
4. Modify the process
5. Develop criteria to see if it works

Project Leader: Ron Ferrell (WRP)	**Process Owner:** Wetlands Restoration Program

Team Members:
Susan Klimek (WRP), Hal Bryson (WRP), Dave Schiller, (DOT), Frank McBride (NCWRC), Kelly Williams (DCM), Linda Pearsall (NHP), Scott McLendon (COE), Jennifer Derby (EPA), John Hammond (FWS), Mike Street (DMF)

Potential Stakeholders
NMFS, land trusts/non-government agencies, local governments, Natural Resource Conservation Service, public

Start Time:	**End Date:**	**Duration:** 9 months

Dependencies:
- Availability of staff
- Availability/standardization of data

Resources:
- WRP's current watershed plans
- DOT GIS resources
- NHP data
- Availability of other agency data

Project Deliverables:
- A defined process that incorporates information from all resource agencies and general public into watershed plans, including mitigation objectives

Design and Implementation of New Program

The Ecosystem Enhancement Program (EEP)

- Fears
- Key Issues
- Concept (Mission and Purpose)
- Program Goals
- Program and Performance Measures
- EEP Elements
- EEP Stakeholders
- Relationship Wheel
- Core Processes
- Organization Structure
- Implementation Ideas
- Recommendations

Fears

- Will in-house NCDOT mitigation be phased out? If so, will the current NCDOT expertise stick around for implementation of a new program? (people flite)
- Stakeholders not involved in development but affected by or have roles in EEP (General Assembly, mitigation bankers, public)
- Make sure that unmitigatable impacts are avoided
- Stormwater should bit be mitigation
- Mission – not stormwater or pollution treatment
- General Assembly overt support by legislation
- Putting all of NC's mitigation eggs in one basket (unproven)
- Can we come to an agreement on functional assessment methodology?
- System reference sites to serve as standards for measuring success of mitigation
- Resisting deadline and rules changing takes time
- Implementation by December 2002
- What is the incentive to do on-site mitigation? (permit requirement)
- Lack of accountability (process/management) – do the measures help ensure accountability?
- Loss of regulatory oversight of specific mitigation projects (no approval points?)
- Need to ensure site success on annual basis
- Will the EEP provide mitigation for the sub-aquatic vegetation impacts?
- Functional assessment methodology is a necessary precursor to implementation of the EEP
- Need to consider mitigation for temporary project impacts that do not re-attain pre-project condition and must be reclassified as permanent

Key Issues

1. Lack of synchronization, coordination, communication, and timing of mitigation with the planning/permitting process
2. No clear definition of roles and responsibilities
   Lack of defined mitigation processes
   Customer and suppliers not educated
   Process participant skills not defined and recruitment of skilled people difficult (no skill requirements)
3. Difficult to identify, obtain, and improve mitigation sites
4. Success of mitigation is not defined in terms of function restoration
   Impacts are over inflated such as commonly defined impacts
   Lack of common environmental standards for success
   Mitigation for mitigation sake
5. Mitigation Science not fully developed or linked to regulatory requirements and decision making – we are not using “lessons learned”

Concept

***Purpose of EEP** (What is unique and why does it exist?)*

The purpose of the EEP is to provide at least functional replacement at the watershed level for ecosystem impacts of development

Attributes:

- It is a program
- It benefits from an interagency relationship
- It uses a multi-disciplinary approach
- It identifies ecosystem needs at the watershed level
- It provides services that preserve, enhance, and restore ecological functions
- It has various funding sources, including compensatory mitigation

To provide a program that identifies Ecosystem needs at the watershed level and preserves, enhances and restores ecological functions through interagency participation and various funding sources including but not limited to compensatory mitigation.

***Mission of the EEP** (Areas where this organization decides to focus)*

- The mission of the EEP is to assess, identify, restore, enhance, protect and preserve the natural resources of North Carolina at the watershed level.

- To improve and enhance the natural resources of North Carolina through assessing and identifying areas where functional enhancement and replacement of watershed is needed and addressing them through preservation, restoration, and enhancement
- Identify, assess, reserve, enhance, protect, and preserve the ecological functions of the natural resources of North Carolina at the watershed level
- Restore, enhance and preserve the ecosystem functions of the watersheds throughout North Carolina
- Conserve and replace the natural resources of North Carolina through preservation, enhancement, and restoration of ecosystems and ecological function at the watershed level
- Assessments
- Restoration
- Enhancement
- Replacements
- Identification of impacts
- Other preservation
- Non-DOT
- To improve watershed functional performance through a program which assesses needs and implements multiple projects to satisfy regulatory requirements

To protect the natural resources of North Carolina through the assessment, restoration, enhancement, and preservation of ecosystem functions and compensation for development impacts at the watershed level.

Program Goals

I. Ensure consistency among EEP and state and federal regulatory and policy requirements

II. Ensure EEP satisfies accepted compensatory mitigation requirements

III. Develop and implement ecologically-significant projects based on watershed needs

IV. Provide up-front compensatory mitigation for accepted project impacts

V. Prepare management plans for all watersheds on appropriate hydrological unit scale

VI. Provide opportunities to the general public to participate in watershed planning and program implementation

VII. Provide information for the public concerning ecological functions and needs of watersheds

Performance Measures

- Observation and Feedback –Qualitative
- Comprehensive accountability study conducted annually
- *X* acres protected by EEP in support of “Million Acres” Program
- Amount of watershed improvement achieved after five or more years through appropriate measures
- Percentage of watersheds enhanced
- Percentage of successful projects
- Replace all functions lost to impacts from transportation projects (replacement unit less impacted unit is greater than or equal to zero)
- Percentage of transportation projects that are handled by EEP

EEP Elements

- Hydrologist
- Soil Scientist
- Wildlife Biologist
- Fish Biologist
- Forester
- Botanist
- Transportation Engineer
- Information Technology (include GIS)
- Social Anthropologist
- Archaeologist
- Community Planner
- Real Estate Specialist
- Invertebrate and Vertebrate Specialist
- Landscape Ecologist
- Public Information Officer

EEP Stakeholders

EEP Core
WRP
DOT

Regulatory and Review Agencies (agencies that determine if mitigation is adequate)
DWQ
DMF
DCM
NMFS
NCWRC
USFWS
USACE
EPA

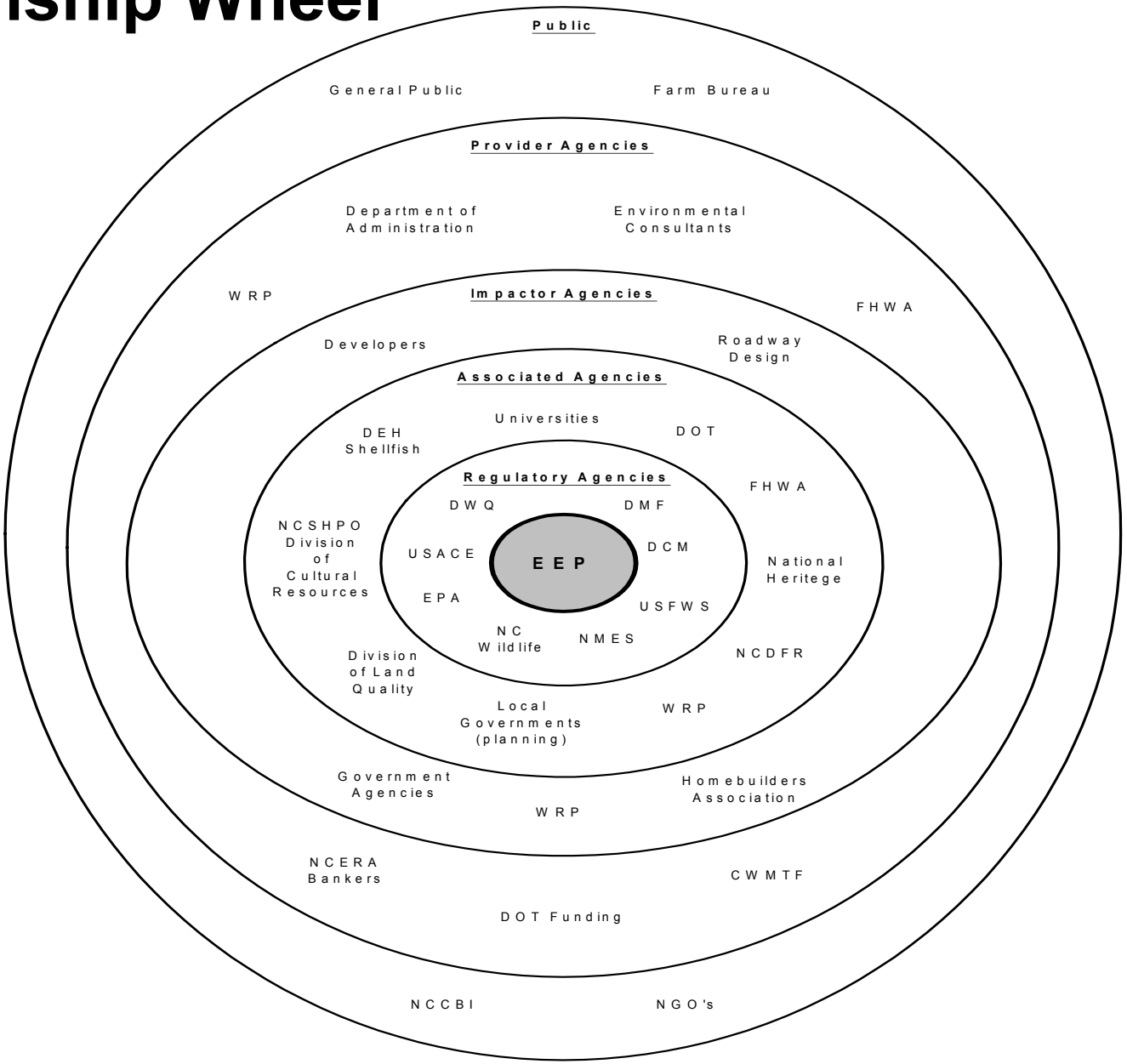
Associated Agencies (permitting, advisory, planning and consistency "determinators")
DOT
FHWA
NHP
NCDFR
DEF Shellfish
DCR
Div. of Land Quality
Local government (planning)
Universities

Impacted Stakeholders
Developers
Homeowners Associations
DOT roadways
Government agencies

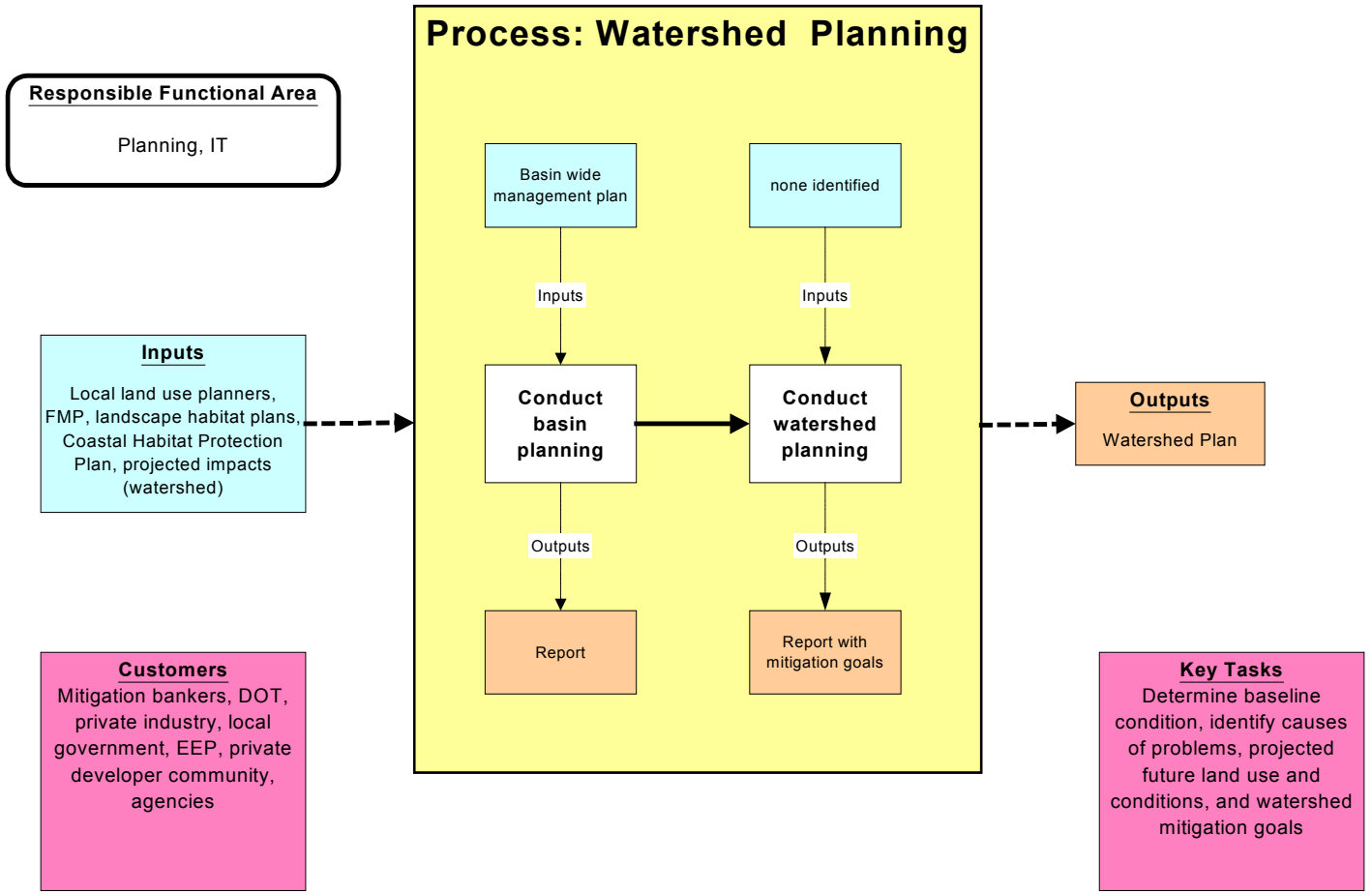
Providers (provide mitigation credits or financing)
FHWA
Environmental consultants
NCERA Bankers
DOT (financing)
CWMTF

Public (provide input into development and implementation of plans)
Environmental Groups
NCCRI
General Public
Farm Bureau

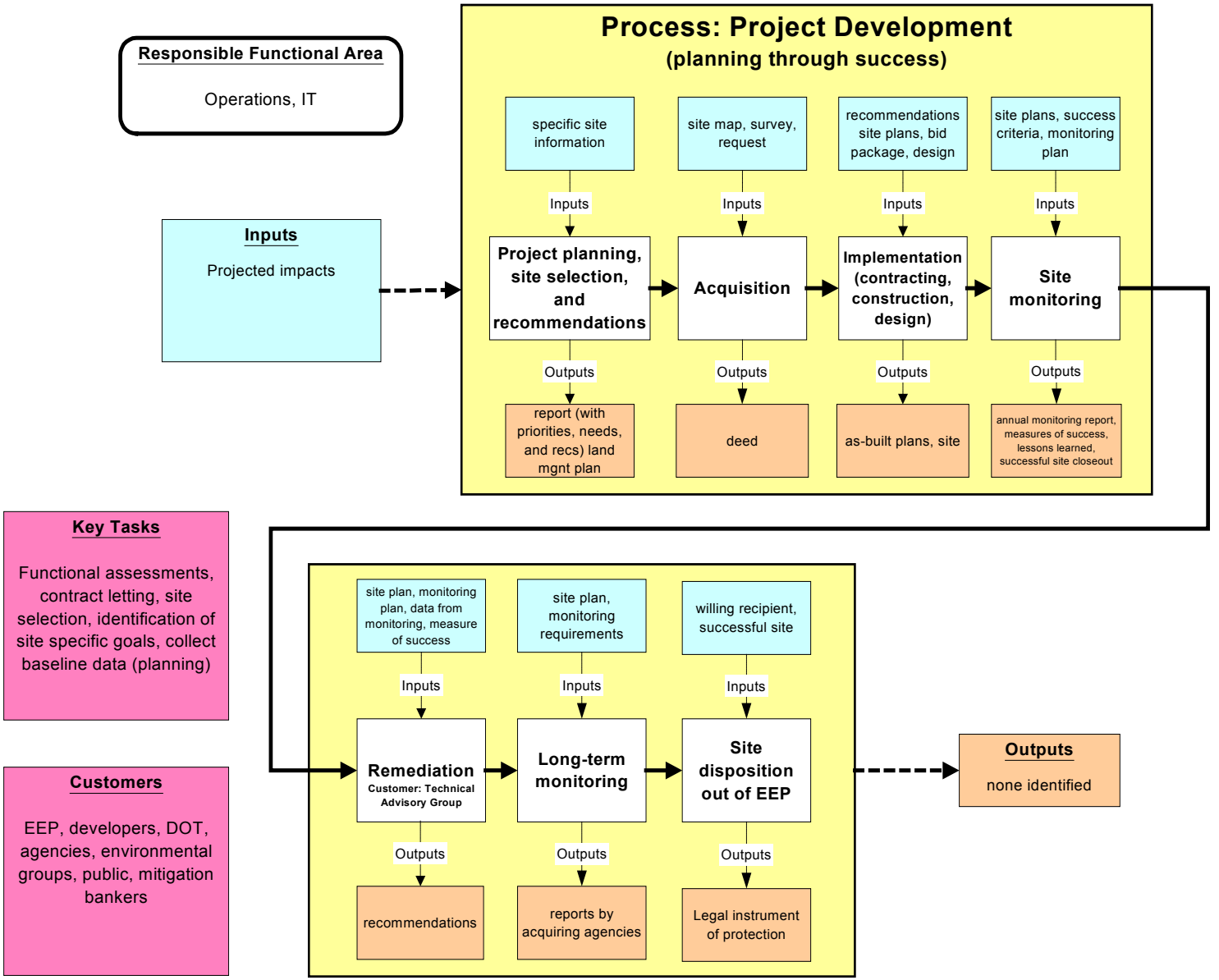
Relationship Wheel



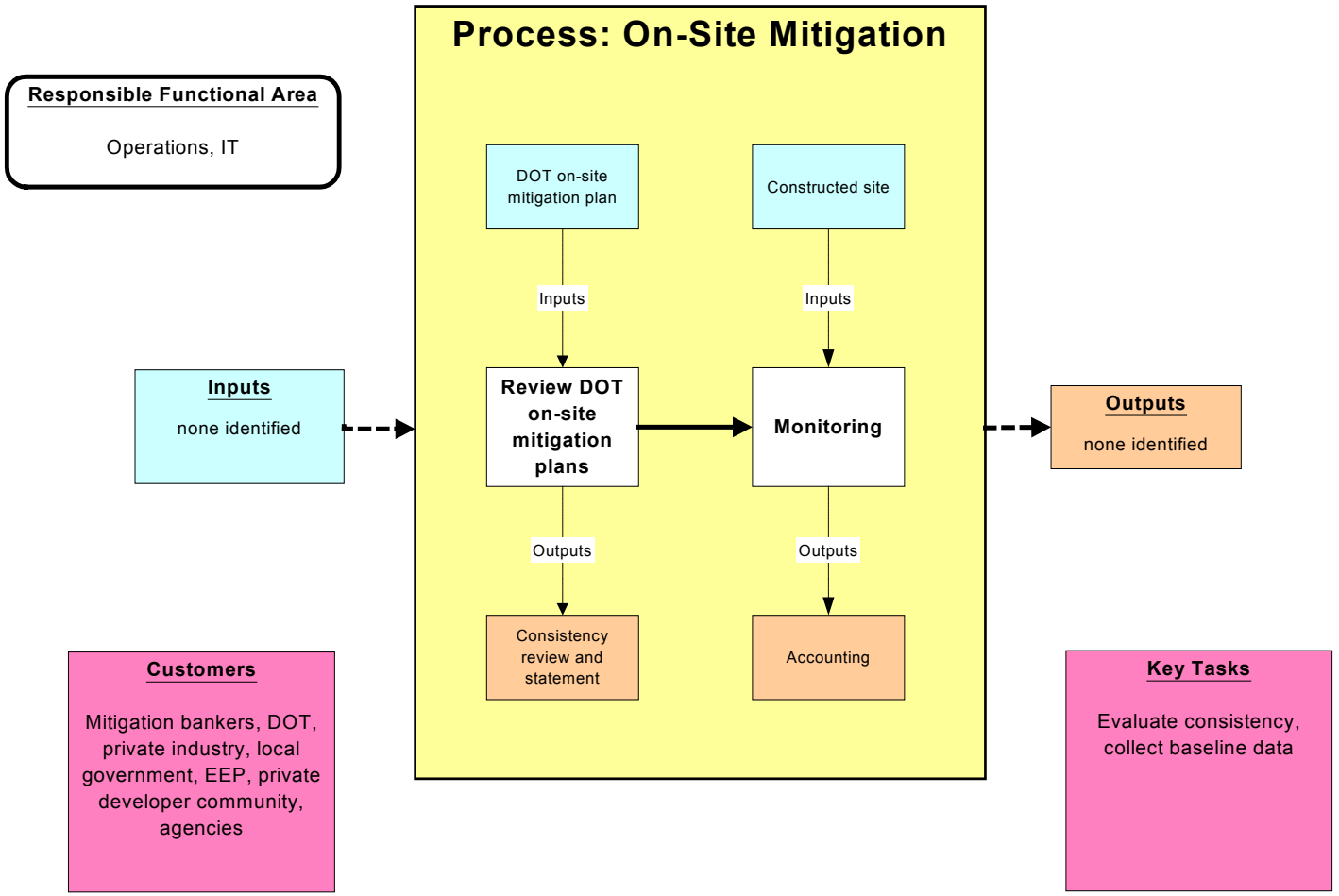
EEP Core Processes



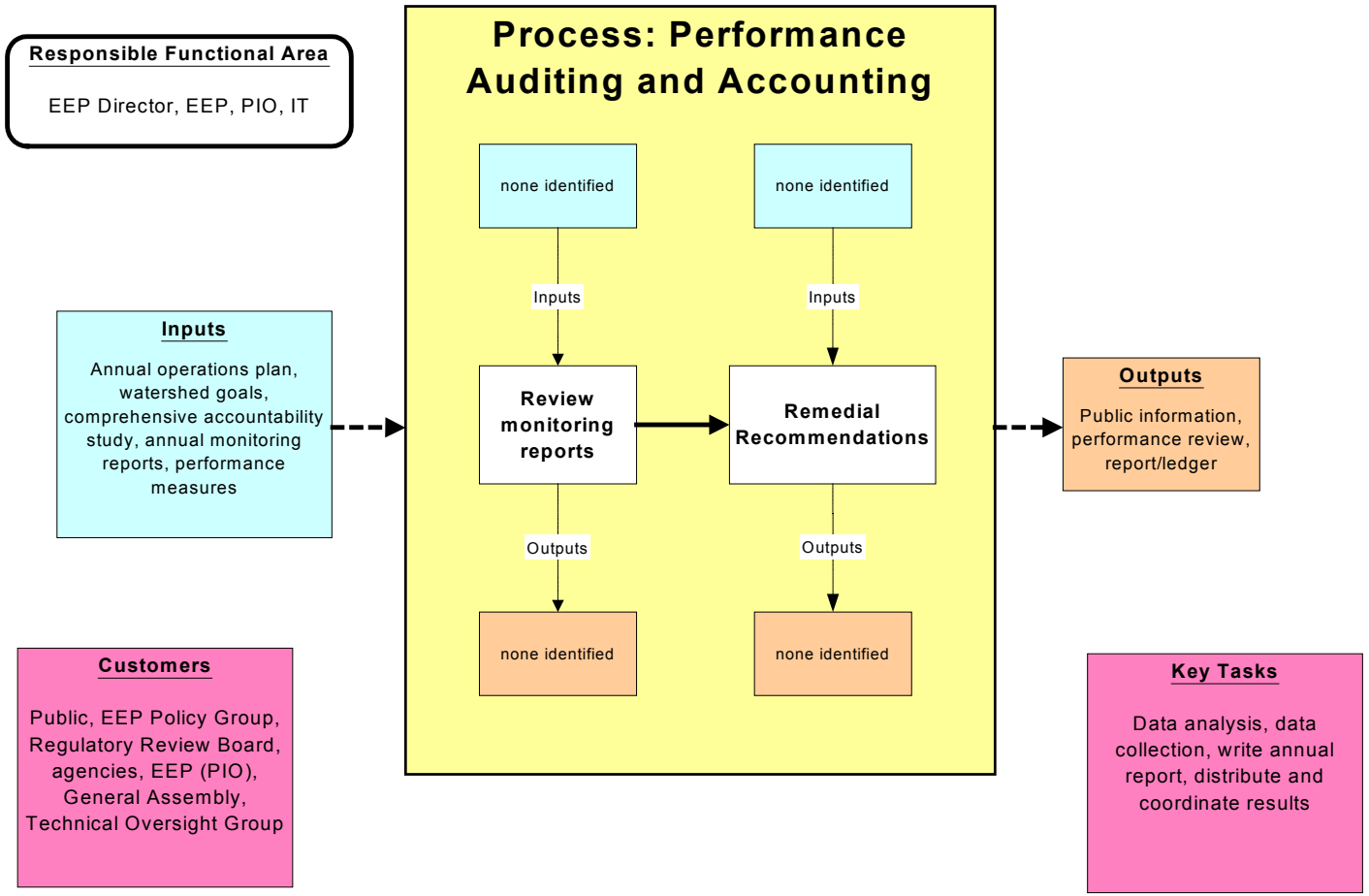
EEP Core Processes (cont'd)



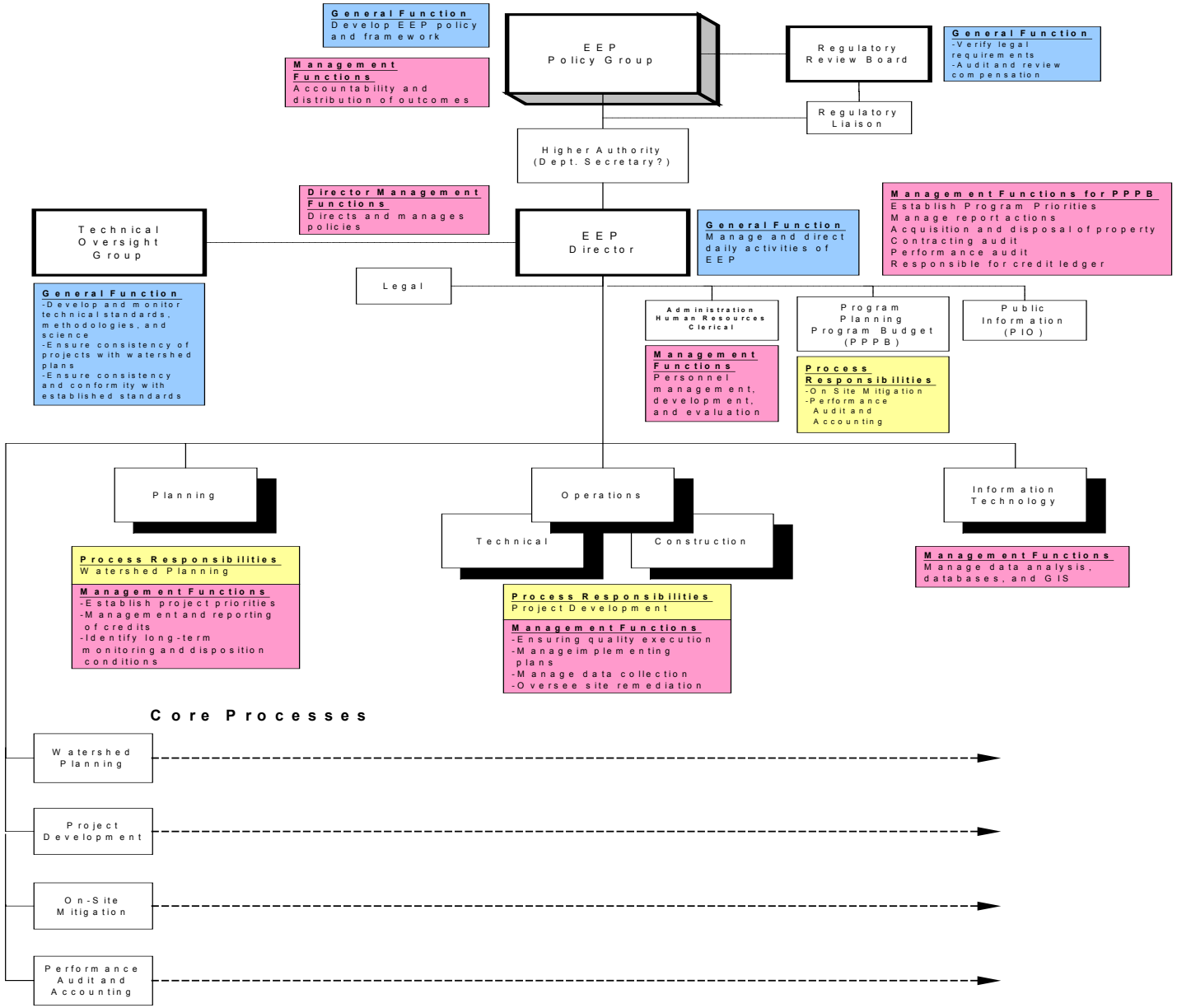
EEP Core Processes (cont'd)



EEP Core Processes (cont'd)



EEP Organizational Structure



Implementation Ideas

A. Regional Reference Data Collection System

- Reference data

B. Accountability

- If an EEP project is not successful, how is it corrected if the money has already been spent?
- What if needed projects cannot be done in a watershed due to acquisition problems?
- Ensure full accountability of EEP with permit requirements
- Develop accounting strategies
- Develop a method to "de-couple" permitting with mitigation yet retain accountability for legal reasons
- Legal and management issues need to be resolved regarding who the EEP Director reports to (is responsible to). That is, should it be structured to report directly to the Secretary of the resident agency or to the Policy Board?
- Develop methodology for determining mitigation credit costs
- Develop concurrence on determining if EEP is meeting requirements of each agency. The problem is that withdrawal of one agency could make the program ineffective – must have "measuring stick" agreed to by all agencies
- Must develop an accounting mechanism in sufficient detail to allow for legal defensibility of permits

C. Education and Outreach

- Assign one point of contact for the EEP (until development is complete)
- Plan informed "reach out" to public, legislature, and stakeholders (public notices?)
- Involve private sector in discussions on EEP before EEP is completely designed
- Plan interim information reach-out to worker bees in all agencies
- Provide the permit people an opportunity for comment
- Total agency "buy-in"
- Get buy-in from agencies that they can support new methods
- Inform the public (brochure, citizen workshops, etc.)

D. Policy/Rulemaking

- DCM involvement in consistency review of plans as related to land use plans and CAMA/CZMA regulations
- Must be careful that we don't embark into defacto-rulemaking. Solution is to complete review and buy-off by Attorney General's office
- Acquire legislation approvals necessary
- How much of this program can be done without new legislation?
- Legislative support
- Memorandum of Understanding
- Establish regulatory safeguards through MOU's/oversight hierarchy
- Establish procedures for incorporation of private use of EEP
- Establish procedures for incorporation of private banks into EEP
- Define future role of bankers in process – bring in bankers for ideas and discussion
- Establish specific agency input and/or approval points
- Regulatory issues of EEP needs to be settled
- Avoidance and minimization framework

E. Integration of Permits and EEP

- Environmental regulatory agency review laws, regulations, rules, and procedures for "deal killers" of proposed EEP
- How are EEP and permit programs integrated?
- Consensus on how to mesh permit review with EEP
- What will permit packages look like and how will agencies review?

F. Functional Assessment

- Agency approved functional assessment methodology
- Develop and agree on wetland functional assessment methodology
- Agreement on list of stream and wetland functions that need to be addressed
- Develop functional assessment methodology
- Develop and agree on stream functional assessment methodology

G. EEP Development

- Determine what activities the EEP will conduct in addition to mitigation and watershed planning
- Will all new MBRT be made up solely of EEP?
- Put WRP and DOT mitigation unit under microscope to get good things and trash the bad
- Identify functions and elements of EEP that are not in WRP now
- Write charter/organization definition/function white paper
- Clear guidance and direction to all technical staff regarding implementation at each step
- Establish core group of individuals to work through EEP
- Decide how to transfer ongoing projects to EEP
- assess the wetland impacts that will occur during the transition and determine appropriate mitigation strategies to ensure no net loss of wetland function

H. Watershed Plans

- Develop concurrence on watershed planning methodology
- Development of local watershed plans
- Agencies should approve watershed plans
- Define watersheds
- Agency approved watershed plans

I. Human Resources Management

- Full sponsor commitment to provide adequate staff resources (rapidly)
- Establish pay system for EEP comparable to DOT
- Select critical positions - approved and funded
- Name staff
- Hire minimum staff to begin and at least pilot
- Is EEP a new organization or will it be made up of personnel from existing agencies (ie, existing staff would stay in current job/agency with responsibilities to EEP)
- Develop organizational chart with staffing descriptions
- Facilities (offices, computers, etc.)
- Management structure from sponsors/higher up's

J. Pilot

- Pilot period of review to establish trust and comfort
- Pilot watershed or transition period where agencies are more involved, to work out kinks, and provide a level of comfort for how the EEP will work later (with less oversight).

K. Funding

- Funding (x10)
- Determine how start-up costs are generated
- Establish funding level and timing between (1) DOT and EEP and (2) public and EEP

L. Post EEP Launch

- What is the post structure of WRP and DOT?
- Evaluate WRP success and apply lessons learned to EEP
- Decide on role of agencies in planning and operation functions
- What happens to the current in-lieu fee program "I owe you's" when ARP is rolled into EEP?
- Who will be responsible for monitoring mitigation sites that DOT is currently building until success criteria are met?

M. On-site Mitigation

- Detail and consensus on on-site mitigation
- Make EEP accept on-site mitigation if it is a condition of the permit. Is the work a part of the project or is it compensatory mitigation?
- Permitting of on-site mitigation (especially stream mitigation with DOT). The goal is not to hold up permit issuance and to encourage on-site mitigation. Alternatives include issuance of certification/permit with 3 month deadline for submittal of plan or require EEP to do this mitigation

N. Miscellaneous

- Develop ways to address difficulties in obtaining mitigation sites – raise the thresholds for payment
- Review of specific mitigation sites. Will the agencies have any input or will it be left to EEP?
- What is the trigger that starts EEP developing mitigation?
- Develop process to encourage on-site mitigation
- Develop a list of unacceptable types of mitigation projects (i.e. sewer plant improvements and stormwater)

Recommendations

Category: **Policies and Rulemaking**
Action: Identify required policies and rulemaking needed to implement the Ecosystem Enhancement Program (EEP) and ensure compatibility of all applicable rules, regulations, statues, policies, and programs.
Tasks:

1. Develop MOU for regulatory agencies and NCDOT that establishes operating procedures of EEP
2. Educate and inform legislature and appropriate boards and commissions
3. Evaluate existing rules, regulations. Statutes, policies and programs to identify and resolve areas of conflict with MOU
4. Make necessary changes to MOU and/or rules
5. Sign MOU
6. Develop detailed rules, policies, and procedures outlining the operation of the EEP to include the relationship with private and other interested parties

Category: **Guidelines**
Action: Establish ratios for justified preservation sites.
Tasks: None identified

Category: **Functional Assessment**
Action: Develop functional assessment methodology.
Tasks:

1. Develop approved list of functions to be addressed
2. Develop Functional assessment methodology standards and guidance acceptable to all agencies for use in mitigation planning which includes updated supplemental watershed need plans to address methodology regulations
3. Develop stream and wetland functional method and begin using the assessment now to evaluate impacts and mitigation.

Recommendations (cont'd)

Category: **Reference Sites**
Action: Establish and monitor reference sites.
Tasks:

1. Locate sites and continually review sites
2. Install monitoring equipment
   - Collect site data
   - Collect hydrology data
3. Compile data
4. Acquire sites (lease, conservation easements)
5. Report and distribute data
   Note: Design and implement a "Regional Reference Data Collection Program" for wetlands and streams by June 2002.

Category: **Concurrence Point**
Action: Develop mitigation concurrence points linked to NEPA/404 Merger 01 Process.
Tasks:

1. Develop concurrence point process for NEPA/404 Merger 01 Process that provides a progressive, step-wise decision-making system that addresses compensatory mitigation requirements

Category: **Education and Outreach**
Action: Establish education and outreach methods.
Tasks:

1. Establish public involvement group to distribute information
2. Hold public/agency workshops to get "buy-in"
3. Communicate to "worker bees", including agenda item at Interagency Meetings
4. Communicate to law makers, Governor, and local governments
5. Develop web page (EEPBay.com) and other transfer technologies

Recommendations (cont'd)

Category: **Accountability**
Action: Develop accounting mechanism so that it is legally defensible (note: EEP should consider running a positive balance to provide needed credits).
Tasks:

1. Set up and maintain accurate ledger
2. Buy-in on functional assessment method for generating credits
3. Develop "acceptable" standards of accounting
4. Attorney General's office reviews and approves on accounting practices
5. EEP begins to sell credits when a positive balance is established (can't sell until successful, as deemed by Technical Review Group)
6. NCDOT carries on parallel process until above is established
7. WRP finishes existing mitigation commitments

Category: **Watershed Plans**
Action: Develop watershed plans.
Tasks:

1. Review existing watershed plans for content
2. Convene agency team to determine gaps in existing plans (data)
3. Determine scale based on watershed needs
4. Modify existing plans
5. Agency review and approval

Recommendations (cont'd)

Category: **EEP Infrastructure**
Action: Develop and implement EEP infrastructure.
Tasks:

1. Develop organization plan and place in state government organization (in conjunction with upper management)
2. Develop human and financial resource plan by EEP function and process (compare salaries to existing "like" positions)
3. Develop duties, responsibilities and qualifications
4. Determine existing human resources that can be shifted

Category: **Pilot Program**
Action: Develop interim program to address project needs in an individual watershed to refine EEP process and gain agency "buy-in."
Tasks:

1. Supplement existing watershed plan in one watershed with agency input
2. NCDOT identifies group of projects impacts in this watershed
3. Identify mitigation projects in watershed
4. Develop functional assessment methodology
5. NCDOT develop site plans with agency coordination
6. Re-assess and refine proposed process

Category: Funding
Action: Identify funding sources and determine fee schedule.
Tasks:

1. Develop functional assessment
2. Determine cost/functional units
3. Determine level of funding needed beyond that generated by fees
   Note: Establish a "Fee Schedule" Team.

Recommendations (cont'd)

Category: **Post EEP Era**
Action: Determine human resource abilities utilizing existing agency staff and present recommendation to sponsors.
Tasks:

1. Evaluate successful mitigation program options
2. Apply to EEP

Category: **On-site mitigation**
Action: Determine need to implement on-site mitigation.
Tasks:

1. Establish an on-site mitigation team

Recognition

The NCDOT, NCDENR, and USACE would like to thank all workshop participants for their hard work, leadership and sincere commitment put forth during the Mitigation Process Improvement Workshops:

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Kathy Matthews
Kelly Williams
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Mike Street
Nina Szlosberg
Odessa McGlown
Phil Harris
Randy Griffin
Roger Sheats
Ron Ferrell
Scott McLendon
Secretary Bill Ross
Steve Lund
Wayne Wright